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Revised Draft Environmental Impact Statement for Revision of the Sequoia and Sierra National Forests Land Management Plans

Volume 2: Appendices



Forest Service

Pacific Southwest Region

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Cover Photo: Tiger Lily in the Golden Trout Wilderness

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Acronyms and Abbreviations

ACS	American Community Survey
AF	acre-feet
AUM	animal use month
BISON	biodiversity information serving our nation
BLM	Bureau of Land Management
BMA	backcountry management area
BMP	best management practice
CAR	critical aquatic refuge
CBA	challenging backroad area
CCD	census county division
CCSM	Community and Climate System Model
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNRM	Centre National de Recherches Météorologiques
CO	carbon monoxide
CWHR	California wildlife habitat relationship
CWPZ	community wildfire protection zone
CW	conservation watershed
DDT	dichlorodiphenyltrichloroethane
DEIS	draft environmental impact statement
DPS	distinct population segment
DRA	destination recreation area
EIS	environmental impact statement
ENSO	El Niño-Southern Oscillation
eNVC	expected net change value
EPA	Environmental Protection Agency
FAR	functional-at-risk
FEIS	final environmental impact statement
FERC	Federal Energy Regulatory Commission
FRID	fire return interval departure
FSH	Forest Service Handbook
GFDL	Geophysical Fluid Dynamics Laboratory
GFZ	general fire zone
GGO	great gray owl
GIS	geographical information systems
GRA	general recreation area
GSNM	Grand Staircase National Monument
GTR	general technical report
GWPZ	general wildfire protection zone

Acronyms and Abbreviations

HRCA	home range core area
HUC	hydraulic unit code
HVRAs	highly valued resources and assets
IMPROVE	Interagency Monitoring of Protected Visual Environments
IRA	inventoried roadless area
KRRT	Kern River rainbow trout
LRMP	land and resource management plan
MIST	minimum impact suppression tactics
MMbf	millions of board feet
MMcf	millions of cubic feet
NEPA	National Environmental Policy Act
NO _x	nitrogen oxide
NRHP	National Register of Historic Places
NRIS	Natural Resources Information System
NRV	natural range of variation
NVUM	National Visitor Use Monitoring
NWPS	National Wildlife Preservation System
OHV	off-highway vehicle
OSV	over-snow vehicle
PAC	protected activity center
PCT	Pacific Crest Trail
PG&E	Pacific Gas and Electric
PILT	payment in lieu of taxes
PM	particulate matter
PM ₁₀	particulate matter less than 10 micrometers
PM _{2.5}	particulate matter less than 2.5 micrometers
POD	potential operational delineation
RCA	riparian conservation area
RDEIS	revised draft environmental impact statement
RMA	recreation management area
ROG	reactive organic gas
ROS	Recreation Opportunity Spectrum
SCC	species of conservation concern
SCE	Southern California Edison
SIO	scenery integrity objective
SMS	scenery management system
SO _x	sulfur oxide
TMDL	total maximum daily load
TOG	total organic gas

Acronyms and Abbreviations

UC	University of California
USC	United States Code
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WCF	watershed condition framework
WHMA	wildlife habitat management area
WMZ	wildfire maintenance zone
WRAP	watershed restoration action plan
WRZ	wildfire restoration zone
WSR	wild and scenic river

Appendix A

Comparison of Action Alternative Plan Components

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Appendix A.

Comparison of Action Alternative Plan Components

Introduction

Between November 16, 2017, and July 27, 2018, core interdisciplinary team members from Forest Service Region 5 and from both National Forests met to develop planning components. This was done to comply with 40 CFR 1505.1. That regulation requires agency procedures to encompass a reasonable range of alternatives to manage Forest Service-administered lands in the Sierra and Sequoia National Forests. The Forest Service reviewed the existing forest plans (as amended) to establish the No Action Alternative. Our resource specialists compared the various action alternatives for each issue topic defined in chapter 2, “Alternatives, Including the Proposed Action.”

Table A-1 provides the planning component and acronym coding key for the subsequent individual tables. **Tables A-2** through **A-33** compare planning components and subcomponents for Alternatives B through D.

Plan components are provided in a standardized format as follows:

- (main code-sub code-plan component type) plan component number
- The main code references either a resource, for example, TERR for terrestrial ecosystems, or a type of area, for example, MA for management area; the sub code references where the plan components apply, for example, FW for forestwide; the third series of letters references the plan component type, for example, DC for desired conditions. In some cases, plan components apply to one forest only, in which case, either SQF (Sequoia National Forest) or SNF (Sierra National Forest) precedes the main code.

Table A-1. Alternatives Matrix Code Key

Main Code	Main Code Description	Sub Code	Sub Code Description
FIRE	Fire Management	FW	Forestwide
		CWPZ	Community Wildfire Protection Zone
		WDZ	Wildland-urban Intermix Defense Zone
		GWPZ	General Wildfire Protection Zone
		GFZ	General Fire Zone
		WRZ	Wildfire Restoration Zone
		WMZ	Wildfire Maintenance Zone

Appendix A. Comparison of Action Alternative Plan Components

Main Code	Main Code Description	Sub Code	Sub Code Description
TERR	Terrestrial Ecosystems	FW	Forestwide
		BLU	Blue Oak
		CHAP	Chaparral-Live Oak
		MONT	All Montane Vegetation Types
		OAK	Black Oak/Canyon Live Oak
		POND	Ponderosa Pine
		DMC	Dry Mixed Conifer
		MMC	Moist Mixed Conifer
		UPPR	All Upper Montane Vegetation Types
		RFIR	Red Fir
		LDGP	Lodgepole Pine
		JEFF	Upper Montane Jeffrey Pine
		MCHP	Montane Chaparral
		ALPN	Subalpine and Alpine
		PINY	Pinyon-Juniper
		SAGE	Sagebrush
		XER	Xeric Shrub
		OLD	Old Forest
		CES	Complex Early Seral Habitats
		ASPN	Aspen
		SH	Special Habitats
MA	Management Area	GSG	McKinley and Nelder Giant Sequoia Grove Management Area
		WHMA	Wildlife Habitat Management Area
		FL	Focus Landscape
		CW	Conservation Watershed
		CAR	Critical Aquatic Refuge
		DRA	Destination Recreation Area
		GRA	General Recreation Area
		CBRA	Challenging Backroad Recreation Area
		RWLD	Recommended Wilderness
		BMA	Backcountry Management Area
		PCTW	Pacific Crest Trail in Designated Wilderness
		PCT	Pacific Crest Trail outside Designated Wilderness
WTR	Watersheds	FW	Forestwide
		RCA	Riparian Conservation Areas
RCA	Riparian Conservation Areas	MEAD	Meadows
		RIV	Rivers and Streams
		LPP	Lakes, Pools, Ponds
		SPR	Springs and Seeps

Appendix A. Comparison of Action Alternative Plan Components

Main Code	Main Code Description	Sub Code	Sub Code Description
SPEC	Species Direction	FW	Forestwide
		FSHR	Fisher
		SM	Sierra Marten
		SHP	Bighorn Sheep
		CSO	California Spotted Owl
		GGO	Great Gray Owl
		NG	Northern Goshawk
		WF	Willow Flycatcher
		YT	Yosemite Toad
		LCT	Lahontan Cutthroat Trout
		PCT	Paiute Cutthroat Trout
		GT	Golden Trout
		LKGT	Little Kern Golden Trout
INV	Invasive Species	FW	Forestwide
REC	Sustainable Recreation	FW	Forestwide
SCEN	Scenic Integrity	FW	Forestwide
DA	Designated Area	NRT	National Recreation Trails
		RNA	Research Natural Area
		WILD	Designated Wilderness
TIMB	Timber Management	FW	Forestwide
RANG	Rangeland Management	FW	Forestwide

Table A-2. Fire Management

Alternative B	Alternative C and E	Alternative D
FIRE MANAGEMENT – Desired Conditions		
Desired Condition (FIRE-FW-DC) 01 Fire management activities minimize the risk of loss of life and damage to property or ecosystem function. Firefighter and public safety is the first priority in every fire management activity.	Desired Condition (FIRE-FW-DC) 01 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 01 Same as Alternative B.
Desired Condition (FIRE-FW-DC) 02 Fire management activities reduce fuel buildup, help maintain and protect habitat for a variety of species, reduce smoke from larger fires, provide added protection for communities, and restore fire on the landscape. These actions are also an integral part of achieving sustainable recreation, particularly by maintaining scenic attractiveness, integrity, and character.	Desired Condition (FIRE-FW-DC) 02 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 02 Same as Alternative B.
Desired Condition (FIRE-FW-DC) 03 Fire management uses an all-lands, risk-based approach in planning and decision-making, responsive to the latest fire and social sciences, and adaptable to rapidly changing conditions, including climate change. Wildfire management is coordinated with agencies and partners.	Desired Condition (FIRE-FW-DC) 03 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 03 Same as Alternative B.
Desired Condition (FIRE-FW-DC) 04 Wildland fires burn with a range of intensity, severity and frequency that allow ecosystems to function in a healthy and sustainable manner. Wildland fire is understood as a necessary process, integral to the sustainability of fire-adapted ecosystems and is used as an effective restoration tool (see TERR-FW-DC related to fire). The landscape is strategically compartmentalized by treated areas and natural features, which facilitates use of prescribed fire and wildfire to meet resource objectives for protecting values and resources.	Desired Condition (FIRE-FW-DC) 04 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 04 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Condition (FIRE-FW-DC) 05 The national forest staff contributes to increased awareness and understanding about wildfire risk among community leaders, service providers, homeowners, permittees, and Tribes who are invested in or adjacent to the national forest. This includes an understanding about the need to adapt communities, properties, and structures to wildfire while also recognizing that wildland fire is a needed ecological process.	Desired Condition (FIRE-FW-DC) 05 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 05 Same as Alternative B.
Desired Condition (FIRE-FW-DC) 06 Wildfire threat is reduced in areas where fuel conditions currently pose the highest threat to communities and community assets, such as powerlines, communication towers and developed recreation sites.	Desired Condition (FIRE-FW-DC) 06 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 06 Same as Alternative B.
Desired Condition (FIRE-FW-DC) 07 Education and enforcement reduce the likelihood of human-ignited wildfire.	Desired Condition (FIRE-FW-DC) 07 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 07 Same as Alternative B.
Desired Condition (FIRE-FW-DC) 08 Provide defensible space, as defined by the California Public Resource Code 4291, around structures on national forest system lands.	Desired Condition (FIRE-FW-DC) 08 Same as Alternative B.	Desired Condition (FIRE-FW-DC) 08 Same as Alternative B.
FIRE MANAGEMENT – Goals		
Goal (FIRE-FW-GOAL) 01 Coordinate wildfire management with relevant State agencies, adjacent Federal agencies, and other partners, and include consideration of the net gains to the public.	Goal (FIRE-FW-GOAL) 01 Same as Alternative B.	Goal (FIRE-FW-GOAL) 01 Same as Alternative B.
Goal (FIRE-FW-GOAL) 02 Work with partners to plan restoration and fire management projects for large landscapes (subwatershed or larger) when and where possible to improve economic feasibility of restoration and effectiveness of changing the negative fire effects from large wildfires.	Goal (FIRE-FW-GOAL) 02 Same as Alternative B.	Goal (FIRE-FW-GOAL) 02 Same as Alternative B.
Goal (FIRE-FW-GOAL) 03 When wildfires affect identified areas of Tribal importance or cultural sites, communicate and collaborate with Tribal leadership during fire incident management to identify Tribal values or areas of Tribal importance.	Goal (FIRE-FW-GOAL) 03 Same as Alternative B.	Goal (FIRE-FW-GOAL) 03 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Goal (FIRE-FW-GOAL) 04 Restore ecosystems to a more fire-resilient condition and lessen the threat of wildfire to communities.	Goal (FIRE-FW-GOAL) 04 Same as Alternative B.	Goal (FIRE-FW-GOAL) 04 Same as Alternative B.
Goal (FIRE-FW-GOAL) 05 Coordinate with other jurisdictions such as communities, Tribes, service providers, and Federal, State, county, and local entities regarding prevention, preparedness, planned activities, and responses to wildland fires. Notify those agencies about upcoming and ongoing fire season and any prescribed fire activity.	Goal (FIRE-FW-GOAL) 05 Same as Alternative B.	Goal (FIRE-FW-GOAL) 05 Same as Alternative B.
Goal (FIRE-FW-GOAL) 06 Help communities become more fire adapted and to improve their ability to withstand a fire without loss of life and property.	Goal (FIRE-FW-GOAL) 06 Same as Alternative B.	Goal (FIRE-FW-GOAL) 06 Same as Alternative B.
Goal (FIRE-FW-GOAL) 07 Work with partners and adjacent landowners to provide defensible space as defined by the California Public Resource Code 4291.	Goal (FIRE-FW-GOAL) 07 Same as Alternative B.	Goal (FIRE-FW-GOAL) 07 Same as Alternative B.
Goal (FIRE-FW-GOAL) 08 When wildfires affect identified areas of Tribal importance, communicate and collaborate with Tribal leadership during fire incident management to identify and, to the extent practical, protect Tribal values and minimize impacts to resources or areas of Tribal importance.	Goal (FIRE-FW-GOAL) 08 Same as Alternative B.	Goal (FIRE-FW-GOAL) 08 Same as Alternative B.
FIRE MANAGEMENT – <i>Standards</i>		
Standard (FIRE-FW-STD) 01 Fire management actions within research natural areas must be planned and carried out in consultation with the national forest research natural area coordinator and the fire resource advisor. Fire management actions in giant sequoia groves should be carried out in consultation with the fire resource advisor.	Standard (FIRE-FW-STD) 01 Same as Alternative B.	Standard (FIRE-FW-STD) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Standard (FIRE-FW-STD) 02 If fire management actions are required within designated wilderness areas, research natural areas, botanical areas, giant sequoia groves, or the Pacific Crest National Scenic Trail management area:</p> <ul style="list-style-type: none"> • Apply minimum impact strategies and tactics to manage wildland fire, unless more direct attack is needed to protect people or adjacent property. • When possible, allow naturally ignited wildfires to function in their natural role. <p>In cases where fire may damage the ecological values for which a research natural area was established, measures should be taken to exclude fire from the research natural area.</p>	<p>Standard (FIRE-FW-STD) 02 Same as Alternative B.</p>	<p>Standard (FIRE-FW-STD) 02 Same as Alternative B.</p>
FIRE MANAGEMENT – Guidelines		
<p>Guideline (FIRE-FW-GDL) 01 Use naturally ignited and prescribed wildland fires to meet multiple resource management objectives where and when conditions permit, and risk is within acceptable limits.</p>	<p>Guideline (FIRE-FW-GDL) 01 Same as Alternative B.</p>	<p>Guideline (FIRE-FW-GDL) 01 Same as Alternative B.</p>
<p>Guideline (FIRE-FW-GDL) 02 When managing wildland fire (wildfire and prescribed fire), use a variety of fire management options, including hand and aerial ignitions, to achieve a mix of fire effects. When safe and feasible, limit extensive continuous areas of high-severity fire effects in old forest habitat.</p>	<p>Guideline (FIRE-FW-GDL) 02 Same as Alternative B.</p>	<p>Guideline (FIRE-FW-GDL) 02 Same as Alternative B.</p>
<p>Guideline (FIRE-FW-GDL) 03 When managing wildland fire, allow fire to burn in riparian ecosystems when fire effects are expected to be within the natural range for the ecosystem to improve riparian ecosystem function.</p>	<p>Guideline (FIRE-FW-GDL) 03 Same as Alternative B.</p>	<p>Guideline (FIRE-FW-GDL) 03 Same as Alternative B.</p>
<p>Guideline (FIRE-FW-GDL) 04 Where possible during wildland fire management activities, locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside of riparian conservation areas to avoid impacts to aquatic- and riparian-dependent resources.</p>	<p>Guideline (FIRE-FW-GDL) 04 Locate incident bases, camps, helibases, staging areas, and other centers for incident activities outside of riparian conservation areas to avoid impacts to aquatic- and riparian-dependent resources. Where possible, locate helispots and spike camps outside of riparian conservation areas.</p>	<p>Guideline (FIRE-FW-GDL) 04 Same as Alternative B.</p>

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Guideline (FIRE-FW-GDL) 05 During wildfires, avoid fire management activities in special habitats (see Terrestrial section, chapter 2) except when necessary to protect life and property. This includes activities such as line construction, staging areas, safety zones, water drafting, and camps. When fire management activities near special habitats are necessary, take extra measures to avoid spread of invasive plants.	Guideline (FIRE-FW-GDL) 05 Same as Alternative B.	Guideline (FIRE-FW-GDL) 05 Same as Alternative B.
Guideline (FIRE-FW-GDL) 06 When conducting fire management activities, take appropriate measures to prevent the spread of invasive species.	Guideline (FIRE-FW-GDL)06 Same as Alternative B.	Guideline (FIRE-FW-GDL) 06 Same as Alternative B.
Guideline (FIRE-FW-GDL) 07 When safe and feasible, protect highly valued old, den and nest trees ahead of burn operations using techniques such as targeted burning, removing fuel from the base of trees, and providing direct protection.	Guideline (FIRE-FW-GDL) 07 Same as Alternative B.	Guideline (FIRE-FW-GDL) 07 Same as Alternative B.
STRATEGIC FIRE MANAGEMENT ZONES – Desired Conditions		
Desired Condition (FIRE-CWPZ-DC) 01 Areas adjacent to communities with current high fire risk have low fuel loadings, designed to result in less intense fire behavior and to facilitate safe wildland fire operations. In some cases, terrestrial ecosystem desired conditions may not be met.	Desired Condition (FIRE-WDZ-DC) 01 Areas adjacent to communities with current high fire risk have low fuel loadings, designed to result in less intense fire behavior and to facilitate safe wildland fire operations. In some cases, terrestrial ecosystem desired conditions may not be met.	Desired Condition (FIRE-CWPZ-DC) 01 Same as Alternative B.
Desired Condition (FIRE-CWPZ-DC) 02 Over time, risk to communities is reduced sufficiently in the community wildfire protection zone to allow some areas to be placed in a lower risk zone, including the general wildfire protection or wildfire restoration zones.	No Similar Desired Condition.	Desired Condition (FIRE-CWPZ-DC) 02 Same as Alternative B.
STRATEGIC FIRE MANAGEMENT ZONES – Goals		
Goal (FIRE-CWPZ-GOAL) 01 Protect communities (life and property) from the negative impacts of wildfire.	Goal (FIRE-WDZ-GOAL) 01 Protect communities (life and property) from the negative impacts of wildfire.	Goal (FIRE-CWPZ-GOAL) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Goal (FIRE-CWPZ-GOAL) 02 Reduce the impacts of wildfire by creating fire-adapted communities through fuel reduction treatments, prescribed fire, and managing wildfires that can benefit natural resources while reducing risk.	Goal (FIRE-WDZ-GOAL) 02 Reduce the impacts of wildfire by creating fire-adapted communities through fuel reduction treatments, prescribed fire, and managing wildfires that can benefit natural resources while reducing risk.	Goal (FIRE-CWPZ-GOAL) 02 Same as Alternative B.
STRATEGIC FIRE MANAGEMENT ZONES – Standards		
Standards (FIRE-CWPZ-STD) 01 In community buffer areas, fuels treatments take precedent over riparian conservation area guidelines when necessary to meet fire behavior objectives. On a site-specific basis, higher levels of large logs may be retained in some areas ¹	Standard (FIRE-WDZ-STD) 01 In the wildland-urban intermix defense zone, fuels treatments take precedent over riparian conservation area guidelines when necessary to meet fire behavior objectives. On a site-specific basis, higher levels of large logs may be retained in some areas ¹	Standard (FIRE-CWPZ-STD) 01 Same as Alternative B.
STRATEGIC FIRE MANAGEMENT ZONES – Guidelines		
Guideline (FIRE-CWPZ-GDL) 01 When planning and implementing projects around communities, manage vegetation in community buffer areas to meet the following conditions: <ul style="list-style-type: none"> a. Reduce fuel loads to provide a safe place to deploy needed resources to protect structures and allow for firefighter safety during a fire event. After treatment, these areas may not meet stand structure or densities terrestrial vegetation desired conditions. b. Minimize snag and log densities to reduce the likelihood of spotting or ember ignitions, maximize fireline production rates, and reduce firefighter safety hazards. <ul style="list-style-type: none"> • No snags should exist within 2.5 tree lengths distance from structures. • Less than 1 large log per acre should exist within 2.5 tree lengths of structures. 	Guideline (FIRE-WDZ-GDL) 01 When planning and implementing projects around communities, manage vegetation in community buffer areas to meet the following conditions: <ul style="list-style-type: none"> a. Reduce fuel loads to provide a safe place to deploy needed resources to protect structures and allow for firefighter safety during a fire event. After treatment, these areas may not meet stand structure or densities terrestrial vegetation desired conditions. b. Minimize snag and log densities to reduce the likelihood of spotting or ember ignitions, maximize fireline production rates, and reduce firefighter safety hazards. <ul style="list-style-type: none"> • No snags should exist within 2.5 tree lengths distance from structures. • Less than 1 large log per acre should exist within 2.5 tree lengths of structures. 	Guideline (FIRE-CWPZ-GDL) 01 Same as Alternative B.

¹ Measured from the structures in the community. Maximum width is based on potential fire behavior in adjacent areas under extreme fire weather conditions (i.e., 97th percentile weather, probable average momentary wind gusts). The maximum width is sufficient to provide low radiant heat from areas of untreated fuels (i.e., four times the potential maximum flame length in adjacent areas on slopes less than 40 percent and six times the potential maximum flame length in adjacent areas on slopes greater than 40 percent).

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Guideline (FIRE-CWPZ-GDL) 02 To protect communities, locate fuels treatments in areas that pose the greatest fire threat.</p> <ul style="list-style-type: none"> • Ensure sufficient treatments increase and improve tactical opportunities to manage wildfires and reduce the spread rate and intensity of wildfires. • Consider placing treatments along ridges, roads, or other natural or man-made lines. 	<p>Guideline (FIRE-WDZ-GDL) 02 To protect communities in the wildland-urban intermix defense zone, locate fuels treatments in areas that pose the greatest fire threat.</p> <ul style="list-style-type: none"> • Ensure sufficient treatments increase and improve tactical opportunities to manage wildfires and reduce the spread rate and intensity of wildfires. • Consider placing treatments along ridges, roads, or other natural or man-made lines. 	<p>Guideline (FIRE-CWPZ-GDL) 02 Same as Alternative B.</p>
General Wildfire Protection Zone – Desired Conditions		
<p>Desired Condition (FIRE-GWPZ-DC) 01 The threat to communities from wildfires starting in this zone is minimal due to vegetation conditions reaching a balance of reduced excessive fuel loading while maintaining terrestrial ecosystem desired conditions.</p>	<p>N/A See General Fire Zone direction.</p>	<p>Desired Condition (FIRE-GWPZ-DC) 01 Same as Alternative B.</p>
<p>Desired Condition (FIRE-GWPZ-DC) 02 The landscape is resilient and can tolerate varying effects of wildfires. Over time, risk to values is reduced sufficiently in the general wildfire protection zone to allow some areas to be placed in a lower risk zone including the wildfire restoration and wildfire protection zones.</p>	<p>N/A See General Fire Zone direction.</p>	<p>Desired Condition (FIRE-GWPZ-DC) 02 Same as Alternative B.</p>
General Wildfire Protection Zone – Goals		
<p>Goal (FIRE-GWPZ-GOAL) 01 Protect natural resources from the negative impacts of wildfire and prevent direct threats to life or property in nearby communities.</p>	<p>N/A See General Fire Zone direction.</p>	<p>Goal (FIRE-GWPZ-GOAL) 01 Same as Alternative B</p>
<p>Goal (FIRE-GWPZ-GOAL) 02 Reduce the threat of wildfire spreading to communities through fuel reduction treatments, prescribed fire, wildfires managed to meet resource objectives, and when appropriate and feasible, livestock grazing, while also reducing risk to natural resources.</p>	<p>N/A See General Fire Zone direction.</p>	<p>Goal (FIRE-GWPZ-GOAL) 02 Same as Alternative B.</p>

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
General Wildfire Protection Zone – Guidelines		
Guideline (FIRE- GWPZ-GDL) 01 To reduce the spread rate and intensity of wildfires, locate restoration treatments in areas that pose the greatest fire threat to communities and natural resources and use more tactical opportunity areas like along ridges, roads, and other natural or man-made features.	N/A See General Fire Zone direction.	Guideline (FIRE- GWPZ-GDL) 01 Same as Alternative B
General Fire Zone – Desired Conditions		
N/A See General Wildfire Protection Zone direction.	Desired Condition (FIRE-GFZ-DC) 01 The threat to communities from wildfires starting in this zone is minimal due to vegetation conditions reaching a balance of reduced excessive fuel loading while maintaining terrestrial ecosystem desired conditions.	N/A See General Wildfire Protection Zone direction.
N/A See General Wildfire Protection Zone direction.	Desired Condition (FIRE-GFZ-DC) 02 The landscape is resilient to a range of fire effects, and wildland fire has a predominately positive benefit to ecosystems and resources.	N/A See General Wildfire Protection Zone direction.
N/A See General Wildfire Protection Zone direction.	Desired Condition (FIRE-GFZ-DC) 03 Wildfire is managed to meet resource objectives under a wide range of environmental conditions.	N/A See General Wildfire Protection Zone direction.
N/A See General Wildfire Protection Zone direction.	Desired Condition (FIRE-GFZ-DC) 04 The landscape is resilient to the impacts of wildfire. Over time, risk to natural resources is reduced sufficiently in the general fire zone to allow some areas to be categorized in the wildfire maintenance zone.	N/A See General Wildfire Protection Zone direction.
General Fire Zone – Goals		
N/A See General Wildfire Protection Zone direction.	Goal (FIRE-GFZ-GOAL) 01 Create fire resilient landscapes that can be restored and maintained by managing wildfire to meet resource objectives (which may include prescribed fire).	N/A See General Wildfire Protection Zone direction.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
General Fire Zone – Standards		
N/A See General Wildfire Protection Zone direction.	Standard (FIRE-GFZ-STD) 01 Use natural barriers and features like creeks, old fire footprints, ridges and man-made lines such as roads and trails when managing wildfires to meet resource objectives, unless unsafe or impractical.	N/A See General Wildfire Protection Zone direction.
Wildfire Restoration Zone – Desired Conditions		
Desired Condition (FIRE-WRZ-DC) 01 The landscape is resilient to a range of fire effects, and wildland fire has a predominately positive benefit to ecosystems and resources.	N/A	Desired Condition (FIRE-WRZ-DC) 01 Same as Alternative B.
Desired Condition (FIRE-WRZ-DC) 02 Wildfire is managed to meet resource objectives under a wide range of environmental conditions.	N/A	Desired Condition (FIRE-WRZ-DC) 02 Same as Alternative B.
Desired Condition (FIRE-WRZ-DC) 03 The landscape is resilient to the impacts of wildfire. Over time, risk to natural resources is reduced sufficiently in the wildfire restoration zone to allow some areas to be categorized in the wildfire maintenance zone.	N/A	Desired Condition (FIRE-WRZ-DC) 03 Same as Alternative B.
Wildfire Restoration Zone – Standards		
Standard (FIRE-WRZ-STD) 01 Use natural barriers and features like creeks, old fire footprints, ridges and man-made lines such as roads and trails when managing wildfires to meet resource objectives, unless unsafe or impractical.	N/A	Standard (FIRE-WRZ-STD) 01 Same as Alternative B.
Wildfire Maintenance Zone – Desired Conditions		
Desired Condition (FIRE-WMZ-DC) 01 Ecosystems are resilient to the impacts of wildfire, and wildland fire has predominantly positive benefits to ecosystems and resources.	Desired Condition (FIRE-WMZ-DC) 01 Same as Alternative B.	Desired Condition (FIRE-WMZ-DC) 01 Same as Alternative B.
Desired Condition (FIRE-WMZ-DC) 02 Lands within this zone are maintained in a predominately low risk with high potential benefit condition relative to wildland fire.	Desired Condition (FIRE-WMZ-DC) 02 Same as Alternative B.	Desired Condition (FIRE-WMZ-DC) 02 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Wildfire Maintenance Zone – Standards		
Standard (FIRE-WMZ-STD) 01 Following current wildland fire policy, manage wildfires to meet resource objectives and restore and maintain fire as an ecological process. The responsible line officer must use the current decision support system for wildfire management to document cases when naturally caused wildfires are promptly suppressed.	Standard (FIRE-WMZ-STD) 01 Same as Alternative B.	Standard (FIRE-WMZ-STD) 01 Same as Alternative B.
Standard (FIRE-WMZ-STD) 02 Use natural barriers and features, such as creeks, old fire footprints, ridges, and man-made lines such as roads and trails when managing wildfires to meet resource objectives, unless unsafe or impractical.	Standard (FIRE-WMZ-STD) 02 Same as Alternative B.	Standard (FIRE-WMZ-STD) 02 Same as Alternative B.

Table A-3. Terrestrial Ecosystems

Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Forestwide – Desired Conditions		
Desired Condition (TERR-FW-DC) 01 Each vegetation type is represented by a mosaic of conditions, densities, and structures. This mosaic, which occurs at a variety of scales across landscapes and watersheds, reflects conditions that provide for ecosystem integrity and diversity.	Desired Condition (TERR-FW-DC) 01 Same as Alternative B.	Desired Condition (TERR-FW-DC) 01 Same as Alternative B.
Desired Condition (TERR-FW-DC) 02 Vegetation structure and composition provide ecosystem resilience to climate change and other stressors including altered fire regimes, drought, and flooding in riparian systems.	Desired Condition (TERR-FW-DC) 02 Same as Alternative B.	Desired Condition (TERR-FW-DC) 02 Same as Alternative B.
Desired Condition (TERR-FW-DC) 03 Terrestrial ecosystems retain their essential processes and functions.	Desired Condition (TERR-FW-DC) 03 Same as Alternative B.	Desired Condition (TERR-FW-DC) 03 Same as Alternative B.
Desired Condition (TERR-FW-DC) 04 Native insect and disease populations are generally limited with occasional outbreaks. Vegetation structural diversity and resilience minimizes the scale of insect and disease outbreaks.	Desired Condition (TERR-FW-DC) 04 Same as Alternative B.	Desired Condition (TERR-FW-DC) 04 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-FW-DC) 05 Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and support the persistence of species of conservation concern.	Desired Condition (TERR-FW-DC) 05 Same as Alternative B.	Desired Condition (TERR-FW-DC) 05 Same as Alternative B.
Desired Condition (TERR-FW-DC) 06 The landscape contains a mosaic of vegetation types and structures that provide habitat and connectivity for a variety of species including wide-ranging habitat generalists such as black bear and mule deer; more localized, semi-specialists such as ground-nesting and cavity-nesting birds and mammals; and habitat specialists such as old forest and early seral associated species.	Desired Condition (TERR-FW-DC) 06 Same as Alternative B.	Desired Condition (TERR-FW-DC) 06 Same as Alternative B.
Desired Condition (TERR-FW-DC) 07 The carbon carrying capacity for a given ecosystem is stable or improving, given trends in climate change, fire, insects, disease, and drought.	Desired Condition (TERR-FW-DC) 07 Same as Alternative B.	Desired Condition (TERR-FW-DC) 07 Same as Alternative B.
Desired Condition (TERR-FW-DC) 08 Fire occurs as a key ecological process in fire-adapted ecosystems where it does not pose an unacceptable risk to life and property. Fire regimes, including the frequency, extent, and severity of fire, is ecologically appropriate and enhances ecosystem resilience and habitat heterogeneity, diversity, and quality.	Desired Condition (TERR-FW-DC) 08 Same as Alternative B.	Desired Condition (TERR-FW-DC) 08 Same as Alternative B.
Desired Condition (TERR-FW-DC) 09 Composition, density, structure, and condition of vegetation help reduce the threat of undesirable wildfires to local communities, ecosystems, and scenic character.	Desired Condition (TERR-FW-DC) 09 Same as Alternative B.	Desired Condition (TERR-FW-DC) 09 Same as Alternative B.
Desired Condition (TERR-FW-DC) 10 Terrestrial ecosystems provide a variety of benefits that improve peoples' economic, social, and physical wellbeing (clean water, forest products, livestock forage, carbon sequestration and storage, energy generation, recreational opportunities, landscapes with scenic character and scenic integrity, cultural uses, and biodiversity).	Desired Condition (TERR-FW-DC) 10 Same as Alternative B.	Desired Condition (TERR-FW-DC) 10 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-FW-DC) 11 Vegetation provides sustainable amounts of forest products (including wood fiber; biomass; forage; firewood; edible and medicinal plants; and boughs, bark, berries and cones) for commercial, Tribal, personal, educational, and scientific uses. These products are provided while sustaining soil and water quality and productivity.	Desired Condition (TERR-FW-DC) 11 Same as Alternative B.	Desired Condition (TERR-FW-DC) 11 Same as Alternative B.
Desired Condition (TERR-FW-DC) 12 Vegetation types and vegetation conditions support continued use by Tribes for traditional, ceremonial and medicinal purposes.	Desired Condition (TERR-FW-DC) 12 Same as Alternative B.	Desired Condition (TERR-FW-DC) 12 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Forestwide – Objectives		
Objective SQF (TERR-FW-OBJ) 01 Restore forest structure and composition on 7,500 – 12,000 acres of the montane, upper montane, and portions of the foothill landscape, using primarily mechanical treatment, within 15 years following plan approval.	Objective SQF (TERR-FW-OBJ) 01 Restore forest structure and composition on 3,000 - 6,000 acres of the montane, upper montane, and portions of the foothill landscape, using primarily mechanical treatment, within 15 years following plan approval.	Objective SQF (TERR-FW-OBJ) 01 Restore forest structure and composition on 9,000 – 18,000 acres of the montane, upper montane, and portions of the foothill landscape, using primarily mechanical treatment, within 15 years following plan approval.
Objective SNF (TERR-FW-OBJ) 01 Restore forest structure and composition on 30,000 – 60,000 acres of the montane, upper montane, and portions of the foothill landscapes, using primarily mechanical treatment, within 15 years following plan approval.	Objective SNF (TERR-FW-OBJ) 01 Restore forest structure and composition on 7,500 – 15,000 acres of the montane, upper montane, and portions of the foothill landscapes, using primarily mechanical treatment, within 15 years following plan approval.	Objective SNF (TERR-FW-OBJ) 01 Restore forest structure and composition on 45,000 – 90,000 acres of the montane, upper montane, and portions of the foothill landscapes, using primarily mechanical treatment, within 15 years following plan approval.
Objective SQF (TERR-FW-OBJ) 02 Restore low and moderate severity fire mosaics on at least 32,000 acres within 15 years following plan approval.	Objective SQF (TERR-FW-OBJ) 02 Restore low and moderate severity fire mosaics on at least 43,000 acres within 15 years following plan approval.	Objective SQF (TERR-FW-OBJ) 02 Restore low and moderate severity fire mosaics on at least 50,000 acres within 15 years following plan approval.
Objective SNF (TERR-FW-OBJ) 02 Restore low and moderate severity fire mosaics on at least 50,000 acres within 15 years following plan approval.	Objective SNF (TERR-FW-OBJ) 02 Same as Alternative B	Objective SNF (TERR-FW-OBJ) 02 Restore low and moderate severity fire mosaics on at least 75,000 acres within 15 years following plan approval.
Objective SQF (TERR-FW-OBJ) 03 Implement restoration, enhancements, fuels reduction, or maintenance actions in at least 3 areas of Tribal importance within 15 years following plan approval.	Objective SQF (TERR-FW-OBJ) 03 Same as Alternative B.	Objective SQF (TERR-FW-OBJ) 03 Implement restoration, enhancements, fuels reduction, or maintenance actions in at least 6 areas of tribal importance within 15 years following plan approval.

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Alternative B	Alternative C and E	Alternative D
Objective SNF (TERR-FW-OBJ) 03 Implement restoration, enhancements, fuels reduction, or maintenance actions in at least 5 areas of Tribal importance within 15 years following plan approval.	Objective SNF (TERR-FW-OBJ) 03 Same as Alternative B	Objective SNF (TERR-FW-OBJ) 03 Implement restoration, enhancements, fuels reduction, or maintenance actions in at least 12 areas of Tribal importance within 15 years following plan approval.
TERRESTRIAL ECOSYSTEMS – Forestwide – Goals		
Goal (TERR-FW-GOAL) 01 Work cooperatively with researchers and other organizations to develop appropriate ecological restoration measures, especially within forest landscapes impacted by drought, bark beetle outbreaks, or uncharacteristic wildfire.	Goal (TERR-FW-GOAL) 01 Same as Alternative B.	Goal (TERR-FW-GOAL) 01 Same as Alternative B.
Goal (TERR-FW-GOAL) 02 Restoration projects following large stand-replacing events (such as wildfire, drought, and bark beetle outbreaks) in forest landscapes should be designed to consider: a. safety to people; b. the development of restoration strategies that move current landscape conditions towards ecosystem desired conditions; c. fuel loads and the need to restore natural fire regimes to the recovering landscape; d. wildlife habitat, including the restoration of habitat for forest-dependent species; e. opportunities to increase carbon storage and sequestration; f. future projections in climate and their influence on ecosystems in the affected area; g. long-term maintenance of regional biodiversity; and h. opportunities to recover some economic value as a harvested wood product from dead and dying trees.	Goal (TERR-FW-GOAL) 02 Restoration projects following large stand-replacing events (such as wildfire, drought, and bark beetle outbreaks) in forest landscapes should be designed to consider: a. safety to people; b. the development of restoration strategies that move current landscape conditions towards ecosystem desired conditions; c. fuel loads and the need to restore natural fire regimes to the recovering landscape; d. wildlife habitat, including the restoration of habitat for forest-dependent species; e. opportunities to increase carbon storage and sequestration; f. future projections in climate and their influence on ecosystems in the affected area; and g. long-term maintenance of regional biodiversity.	Goal (TERR-FW-GOAL) 02 Same as Alternative B.
Goal (TERR-FW-GOAL) 03 Work cooperatively with federal and state agencies and other partners to restore low to moderate severity fire to the landscape	Goal (TERR-FW-GOAL) 03 Same as Alternative B	Goal (TERR-FW-GOAL) 03 Same as Alternative B

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Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Forestwide – Standards		
<p>Standard (TERR-FW-STD) 01 Retain conifer trees greater than 30 inches in diameter except when public or firefighter safety is threatened or one of the conditions below is met:</p> <ul style="list-style-type: none"> a) When required for equipment operability, individual trees less than 35 inches in diameter may be removed. b) Outside of occupied California spotted owl territories, trees greater than 30 inches but less than 40 inches in diameter may be removed, felled for coarse woody debris, or girdled for snag creation under the following circumstances: <ul style="list-style-type: none"> 1. When removing trees is needed for aspen, oak, or meadow restoration treatments or for cultural or Tribal importance; 2. In overly dense stands to favor retention or promote the growth of even larger or older shade-intolerant trees to more effectively meet tree species composition and forest structure restoration goals; or 3. To promote the establishment, growth, and development of shade-intolerant species by creating small gaps (generally less than 0.5 acres) in stands historically dominated by shade-intolerant species. 	<p>Standard (TERR-FW-STD) 01 For mechanical thinning harvests specifically designed to treat fuels and/or control stand densities retain all live conifer trees 24 inches in diameter or larger, except to meet public or firefighter safety or equipment operability requirements.</p>	<p>Standard (TERR-FW-STD) 01 Same as Alternative B</p>

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Forestwide – Guidelines		
<p>Guideline (TERR-FW-GDL) 01 Projects facilitate increasing heterogeneity at all scales, from tree clumps to large landscapes. Several treatment strategies can be employed: using landscape topography (slope, aspect, and slope position) to vary stand densities; promoting tree clumps and gaps within a stand, increasing the proportion of large to small trees; retaining important habitat structures such as large trees, snags, and trees with broken tops; and increasing diversity by promoting hardwoods, pines and native plant species.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers 	<p>Guideline (TERR-FW-GDL) 01 Projects facilitate increasing heterogeneity at all scales, from tree clumps to large landscapes. Several treatment strategies can be employed: using landscape topography (slope, aspect, and slope position) to vary stand densities; promoting tree clumps and gaps within a stand, increasing the proportion of large to small trees; retaining important habitat structures such as large trees, snags, and trees with broken tops; and increasing diversity by promoting hardwoods, pines and native plant species.</p>	<p>Guideline (TERR-FW-GDL) 01 Projects facilitate increasing heterogeneity at all scales, from tree clumps to large landscapes. Several treatment strategies can be employed: using landscape topography (slope, aspect, and slope position) to vary stand densities; promoting tree clumps and gaps within a stand, increasing the proportion of large to small trees; retaining important habitat structures such as large trees, snags, and trees with broken tops; and increasing diversity by promoting hardwoods, pines and native plant species.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers
<p>Guideline (TERR-FW-GDL) 02 Mechanical vegetation treatments within forested habitats should include a widely distributed but often clumped distribution of snags and downed logs. Along forest edges and within groups and clumps of large trees, snags and downed logs should be retained to provide habitat and roost sites for wildlife species such as small mammals, cavity-nesting birds, and tree-dwelling bats.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers 	<p>Guideline (TERR-FW-GDL) 02 Mechanical vegetation treatments within forested habitats should include a widely distributed but often clumped distribution of snags and downed logs. Snags and downed logs should be retained to provide habitat and roost sites for wildlife species such as small mammals, cavity-nesting birds, and tree-dwelling bats.</p>	<p>Guideline (TERR-FW-GDL) 02 Mechanical vegetation treatments within forested habitats should include a widely distributed but often clumped distribution of snags and downed logs. Along forest edges and within groups and clumps of large trees, snags and downed logs should be retained to provide habitat and roost sites for wildlife species such as small mammals, cavity-nesting birds, and tree-dwelling bats.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in focus landscapes
<p>Guideline (TERR-FW-GDL) 03 Management activities that generate accumulations of green slash should minimize potential impacts from bark beetles.</p>	<p>Guideline (TERR-FW-GDL) 03 Same as Alternative B.</p>	<p>Guideline (TERR-FW-GDL) 03 Same as Alternative B.</p>

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Alternative B	Alternative C and E	Alternative D
<p>Guideline (TERR-FW-GDL) 04 Mechanical vegetation treatments and salvage operations should retain all large hardwoods, greater than 12 inches in diameter (8 inches for blue oak), except where they pose a threat to human life or property or as needed for operability.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ where there is no overlap with the WHMA 	<p>Guideline (TERR-FW-GDL) 04 Mechanical vegetation treatments and salvage operations should retain all large hardwoods, greater than 8 inches in diameter, except where they pose a threat to human life or property.</p>	<p>Guideline (TERR-FW-GDL) 04 Mechanical vegetation treatments and salvage operations should retain large hardwoods, greater than 12 inches in diameter (8 inches for blue oak) that contribute to the vegetation desired condition for mature hardwoods except where they pose a threat to human life or property or as needed for operability.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ • In focus landscapes, retain large hardwoods, greater than 16 inches in diameter (12 inches for blue oak) that contribute to the vegetation desired condition for mature hardwoods
<p>Guideline (TERR-FW-GDL) 05 Burn prescriptions should be designed and implemented to minimize loss of large hardwoods greater than 12 inches in diameter (8 inches for blue oak). Specifically minimize losses on black oaks greater than 20 inches in diameter.</p>	<p>Guideline (TERR-FW-GDL) 05 Burn prescriptions should be designed and implemented to minimize loss of large hardwoods greater than 8 inches in diameter where large hardwoods are deficient compared to the vegetation NRV. Specifically minimize losses on black oaks greater than 20 inches in diameter.</p>	<p>Guideline (TERR-FW-GDL) 05 Same as Alternative B but threshold is 16 inches (12 inches for blue oak).</p>
<p>Guideline (TERR-FW-GDL) 06 Design vegetation treatments to maintain or enhance special habitat features.</p>	<p>Guideline (TERR-FW-GDL) 06 Same as Alternative B.</p>	<p>Guideline (TERR-FW-GDL) 06 Same as Alternative B.</p>
TERRESTRIAL ECOSYSTEMS – Blue Oak – Desired Conditions		
<p>Desired Condition (TERR-BLU-DC) 01 Blue oak-interior live oak woodlands occur in a highly variable and complex landscape pattern. Blue oak dominates the overstory in patches but is co-dominant with interior live oak or foothill pine. Blue oak woodlands are a mosaic of varying age and size classes with mature oaks that provide acorns from older trees. There are occasional pulses of blue oak regeneration to successfully replace mortality in older trees.</p>	<p>Desired Condition (TERR-BLU-DC) 01 Same as Alternative B.</p>	<p>Desired Condition (TERR-BLU-DC) 01 Same as Alternative B.</p>

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Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-BLU-DC) 02 Fires occur periodically to maintain lower levels of dead grass and litter levels so that they do not fuel intense fire. Fires typically burn with low to moderate vegetation burn severity.	Desired Condition (TERR-BLU-DC) 02 Same as Alternative B.	Desired Condition (TERR-BLU-DC) 02 Same as Alternative B.
Desired Condition (TERR-BLU-DC) 03 In annual grasslands, native plant abundance is maintained or improved and provides enough residual plant matter at the end of the growing season to maintain germination potential, site productivity and to protect soils.	Desired Condition (TERR-BLU-DC) 03 Same as Alternative B.	Desired Condition (TERR-BLU-DC) 03 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Chaparral-Live Oak – <i>Desired Conditions</i>		
Desired Condition (TERR-CHAP-DC) 01 Chaparral comprises native shrub and understory species that reflect the natural range of variation for the site. The chaparral vegetation type is composed of varying age classes and densities that protect against accelerated erosion, with 2 to 20 percent of the type in early seral grass and herbaceous cover, 5 to 20 percent in native herbaceous plants and shrubs, and 70 to 95 percent in dense shrubs.	Desired Condition (TERR-CHAP-DC) 01 Same as Alternative B.	Desired Condition (TERR-CHAP-DC) 01 Same as Alternative B.
Desired Condition (TERR-CHAP-DC) 02 Chaparral is in a constant state of transition from young to older stages and back again, with fire as the primary disturbance. High severity fires that kill most aboveground stems occur on average every 35 to 100 years. Fire-return intervals allow the buildup of native shrub and plant seeds in the soil seed bank and for the accumulation of fuels necessary to support fire-induced regeneration. Invasive nonnative plants do not dominate between fires.	Desired Condition (TERR-CHAP-DC) 02 Same as Alternative B.	Desired Condition (TERR-CHAP-DC) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Chaparral-Live Oak – Guidelines		
Guideline SQF (TERR-CHAP-GDL) 01 Where possible and appropriate to enhance forest structural heterogeneity or an underrepresented hardwood component, projects should create crown space around existing mid-aged California black oak and canyon live oak to allow crown development of the oaks. Where replacement age classes are missing, projects should create openings near mature oaks to stimulate natural regeneration.	Guideline SQF (TERR-CHAP-GDL) 01 Same as Alternative B.	Guideline SQF (TERR-CHAP-GDL) 01 Same as Alternative B.
Guideline SNF (TERR-CHAP-GDL) 02 Treatments using fire within chaparral should be designed to provide a diversity of seral stages at the landscape scale. Where feasible, leave small to medium unburned or lightly burned patches for wildlife within very large burn units.	Guideline SNF (TERR-CHAP-GDL) 02 Same as Alternative B.	Guideline SNF (TERR-CHAP-GDL) 02 Same as Alternative B.
Guideline SNF (TERR-CHAP-GDL) 03 When chaparral is the potential natural vegetation type, treatment projects should not include active reforestation with the intent to convert the area to a forested type.	Guideline SNF (TERR-CHAP-GDL) 03 Same as Alternative B.	Guideline SNF (TERR-CHAP-GDL) 03 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – All Montane Vegetation Types – Desired Conditions		
Desired Condition (TERR-MONT-DC) 01 At the landscape scale, the Sierra Nevada montane landscape is a heterogeneous mosaic of open and closed canopy forest patches, meadows and riparian areas. These ecosystem types occur in a complex mosaic of different densities, sizes, and species mixed across large landscapes that vary with topography, soils, and snow accumulation. The composition, structure, and function of vegetation make these ecosystems resilient to fire, drought, insects, pathogens, and climate change. The mix of seral stage patches, and open versus closed canopied areas, varies by forest type as described in the forest plan. Large and old trees are common in later seral stages throughout the landscape and in varying densities (see “Old Forest Habitats” section).	Desired Condition (TERR-MONT-DC) 01 Same as Alternative B.	Desired Condition (TERR-MONT-DC) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
<p>Desired Condition (TERR-MONT-DC) 02 At the landscape scale, fire is a key ecological process restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor. Fires occur regularly, generally every 10 to 20 years. Fires in this zone burn with low, moderate, or mixed severity, with dispersed patches of high severity (i.e., greater than 75 percent basal area mortality) generally less than 10 acres and rarely greater than 200 to 250 acres in size. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent.</p>	<p>Desired Condition (TERR-MONT-DC) 02 Same as Alternative B.</p>	<p>Desired Condition (TERR-MONT-DC) 02 Same as Alternative B.</p>
<p>Desired Condition (TERR-MONT-DC) 03 At the landscape scale, white pines (such as sugar pine and western white pine) are healthy and vigorous with a low incidence of white pine blister rust. Individual trees and the stands they occur in are resilient to moisture stress, drought, and bark beetles. White pine blister rust-resistant trees are regenerating, and populations are sustained.</p>	<p>Desired Condition (TERR-MONT-DC) 03 Same as Alternative B.</p>	<p>Desired Condition (TERR-MONT-DC) 03 Same as Alternative B.</p>
<p>TERRESTRIAL ECOSYSTEMS – Black Oak/Canyon Live Oak – <i>Desired Conditions</i></p>		
<p>Desired Condition (TERR-OAK-DC) 01 Oak trees, snags, and down logs provide habitat for a variety of wildlife species. Oak snags and live trees with dead limbs, hollow boles, and cavities provide shelter, and resting and nesting habitat. Acorns are plentiful, provide food for wildlife, and are available for traditional cultural uses.</p>	<p>Desired Condition (TERR-BLCK-DC) 01 Same as Alternative B.</p>	<p>Desired Condition (TERR-BLCK-DC) 01 Same as Alternative B.</p>

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Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Black Oak/Canyon Live Oak – Guidelines		
Guideline (TERR-BLCK-GDL 01) Where possible and appropriate to enhance forest structural heterogeneity or an underrepresented hardwood component, projects should create crown space around existing medium- to large-diameter California black oak and canyon live oak to allow crown development of the oaks. Where replacement age classes are missing, projects should create openings near mature oaks to stimulate natural regeneration or retain existing oak regeneration consistent with forest type desired conditions.	Guideline (TERR-BLCK-DC) 01 Same as Alternative B.	Guideline (TERR-BLCK-DC) 01 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Ponderosa Pine – Desired Conditions		
Desired Condition (TERR-POND-DC) 01 At the landscape scale, the ponderosa pine vegetation type consists of open forests with a mosaic of varied tree sizes, densities and understory vegetation. They are dominated by ponderosa pine trees and, where black oak is common, co-dominated by black oak. Understory shrubs and plants are common. These areas are highly resilient.	Desired Condition (TERR-POND-DC) 01 Same as Alternative B.	Desired Condition (TERR-POND-DC) 01 Same as Alternative B.
Desired Condition (TERR-POND-DC) 02 At the landscape scale, areas dominated by open-canopied forests of medium- and large-diameter trees comprise more than 60 percent of the landscape (see forest plan). Overstory tree canopy cover is variable, generally ranging from 10 to 50 percent at a fine-scale, with some small patches exceeding 50 percent cover. When black oak dominates the overstory, because of their wide crowns, canopy cover can be greater than 50 percent. Trees are denser in some locations such as north-facing slopes and canyon bottoms, but in small patches (less than 10 percent of the landscape). Large and old trees are common in most of the landscape in varying densities (see old forest section below). Trees greater than 30 to 40 inches in diameter are common in areas, especially pine and black oak.	Desired Condition (TERR-POND-DC) 02 Same as Alternative B.	Desired Condition (TERR-POND-DC) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
<p>Desired Condition (TERR-POND-DC) 03 At the mid- to fine scale, vegetation structure is highly variable. Trees of different sizes and ages are variably spaced and comprise an irregular, uneven-aged forest. Individual trees are variably spaced with some denser groups. Groups mostly vary from 2 to 10 trees. Tree stocking (basal area) is highly variable, ranging from 20 to 200 square feet per acre, with most areas having fewer than 150 square feet per acre. Irregularly shaped openings with less than 10 percent tree cover make up from 10 to 50 percent of the area. The opening sizes are varied, mostly ranging from 0.05 to 0.5 acre, occasionally greater than 0.5 acre, and contain a mix of grasses, herbaceous plants, shrubs, and young trees. Vigorous shrubs cover 10 to 60 percent of the area. Less than 30 percent of shrubs are decadent with many dead branches. Numbers of seedlings and saplings are sufficient to replace mature and old trees over time, with ponderosa pine regeneration patchy in distribution and occurring in canopy gaps of variable sizes and shapes.</p>	<p>Desired Condition (TERR-POND-DC) 03 Same as Alternative B.</p>	<p>Desired Condition (TERR-POND-DC) 03 Same as Alternative B.</p>
<p>Desired Condition (TERR-POND-DC) 04 At the mid- to fine scale, litter and surface fuel is patchy with fewer than 3 to 10 tons per acre in fuel loading on average over 30 to 70 percent of the area. There are some small areas of up to 30 tons per acre and others with fewer than 5 tons per acre.</p>	<p>Desired Condition (TERR-POND-DC) 04 Same as Alternative B.</p>	<p>Desired Condition (TERR-POND-DC) 04 Same as Alternative B.</p>
<p>Desired Condition (TERR-POND-DC) 05 At the mid- to fine scale, snags greater than 20 inches in diameter are patchily distributed and highly irregular in spacing, with 2 to 40 snags per 10 acres at the landscape scale (see forest plan) providing for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is patchily distributed and ranges from 1 to 10 tons per acre at the landscape scale (see forest plan).</p>	<p>Desired Condition (TERR-POND-DC) 05 Same as Alternative B.</p>	<p>Desired Condition (TERR-POND-DC) 05 Same as Alternative B.</p>

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Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Dry Mixed Conifer – <i>Desired Conditions</i>		
Desired Condition (TERR-DMC-DC) 01 At the landscape scale, the dry mixed conifer vegetation type has a mosaic of patches of trees of varied sizes and ages. It is dominated by ponderosa pine or Jeffrey pine, with varying amounts of sugar pine, white fir, incense cedar, or hardwood trees.	Desired Condition (TERR-DMC-DC) 01 Same as Alternative B.	Desired Condition (TERR-DMC-DC) 01 Same as Alternative B.
Desired Condition (TERR-DMC-DC) 02 At the landscape scale, areas dominated by medium and large-diameter trees comprise more than 60 percent of the landscape. Overstory tree canopy cover is variable and ranges from 10 to 50 percent at a fine scale, with some small patches exceeding 50 percent cover. Trees are denser in some locations, such as north-facing slopes and canyon bottoms, but in small patches in limited areas (less than 20 percent of the area). Vigorous shrubs cover 10 percent or more of the area, with density varying by aspect, slope, and soil type.	Desired Condition (TERR-DMC-DC) 02 Same as Alternative B.	Desired Condition (TERR-DMC-DC) 02 Same as Alternative B.
Desired Condition (TERR-DMC-DC) 03 At the mid- to fine scale, vegetation structure is highly variable. Trees of different sizes and ages are variably spaced and comprise an irregular, uneven-aged forest. Individual trees are variably spaced and interspersed with some denser tree clusters and canopy gaps typically less than 0.2 to 0.5 acre. Tree stocking (basal area) is highly variable, ranging from 20 to 200 square feet per acre, with most areas having fewer than 150 square feet per acre. Numbers of seedlings and saplings are sufficient to replace mature and old trees over time, and pine regeneration is patchy in distribution and occurs in canopy gaps of variable shapes and sizes.	Desired Condition (TERR-DMC-DC) 03 Same as Alternative B.	Desired Condition (TERR-DMC-DC) 03 Same as Alternative B.
Desired Condition (TERR-DMC-DC) 04 At the mid- to fine scale, small irregularly shaped openings with less than 10 percent tree cover make up from 10 to 50 percent of the area, and contain a mix of grasses, herbaceous plants and shrubs.	Desired Condition (TERR-DMC-DC) 04 Same as Alternative B.	Desired Condition (TERR-DMC-DC) 04 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
<p>Desired Condition (TERR-DMC-DC) 05 At the mid- to fine scale, snags greater than 20 inches in diameter are well distributed and highly irregular in spacing, with densities between 2 to 40 snags per 10 acres at the landscape scale (see forest plan) providing for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is irregularly distributed and ranges from 1 to 10 tons per acre at the landscape scale. Litter and surface fuel is patchy with fewer than 3 to 10 tons per acre in fuel loading on average over 30 to 70 percent of the area. There are some small areas of up to 30 tons per acre and others with fewer than 3 tons per acre.</p>	<p>Desired Condition (TERR-DMC-DC) 05 Same as Alternative B.</p>	<p>Desired Condition (TERR-DMC-DC) 05 Same as Alternative B.</p>
<p>TERRESTRIAL ECOSYSTEMS – Moist Mixed Conifer – <i>Desired Conditions</i></p>		
<p>Desired Condition (TERR-MMC-DC) 01 At the landscape scale, varying mixtures of Jeffrey or ponderosa pine, white fir, red fir, incense cedar and sugar pine trees occur. Native shrubs and plants are common in the understory.</p>	<p>Desired Condition (TERR-MMC-DC) 01 Same as Alternative B.</p>	<p>Desired Condition (TERR-MMC-DC) 01 Same as Alternative B.</p>
<p>Desired Condition (TERR-MMC-DC) 02 At the landscape scale, the moist mixed conifer type occurs as a mosaic of forest patches of varied sizes and ages, with a greater proportion of moderate and high canopy cover patches than in drier parts of the landscape. Areas dominated by medium and large diameter trees comprise more than 50 percent of the landscape. Overstory tree canopy cover is highly variable, ranging from 20 to 75 percent, with some small patches exceeding 75 percent cover.</p>	<p>Desired Condition (TERR-MMC-DC) 02 Same as Alternative B.</p>	<p>Desired Condition (TERR-MMC-DC) 02 Same as Alternative B.</p>

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Alternative B	Alternative C and E	Alternative D
<p>Desired Condition (TERR-MMC-DC) 03 At the landscape scale, closed-canopied patches are resilient to high intensity fire when they are embedded in larger areas dominated by highly resilient, open forests. These close-canopied patches consist of a combination of mid-story and understory tree and shrub density, and patchy, light to moderate surface fuels. Early seral vegetation, shrubs, grasses, herbs, tree seedlings or saplings mostly occur in very small areas, intermixed within forest stands or patches. Large and old trees are common in much of the landscape in varying densities (see Old Forest section) in all seral stages. Some trees exceeding 40 to 50 inches in diameter occur on more productive sites.</p>	<p>Desired Condition (TERR-MMC-DC) 03 Same as Alternative B.</p>	<p>Desired Condition (TERR-MMC-DC) 03 Same as Alternative B.</p>
<p>Desired Condition (TERR-MMC-DC) 04 At the mid- to fine scale, moist mixed conifer forest structure is diverse, with high variation in density and spacing. Trees of different sizes and ages, variably spaced, comprise an irregular, uneven-aged forest with all seral stages present, including old forest. Individual trees are variably spaced and interspersed with some denser tree clusters and canopy gaps typically less than 0.2 to 0.5 acre. Tree stocking (basal area) is highly variable, ranging from 50 to 300 square feet per acre (see forest plan) with most areas having fewer than 200 square feet per acre. Seedlings and saplings are sufficient to replace mature and old trees over time, but are not uniformly distributed in stands.</p>	<p>Desired Condition (TERR-MMC-DC) 04 Same as Alternative B.</p>	<p>Desired Condition (TERR-MMC-DC) 04 Same as Alternative B.</p>

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Alternative B	Alternative C and E	Alternative D
<p>Desired Condition (TERR-MMC-DC) 05 At the mid- to fine scale, large snags greater than 20 inches in diameter are patchily distributed, averaging 5 to 40 snags per 10 acres at the landscape scale (see forest plan) providing for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is patchily distributed and averages fewer than 5 tons per acre at the landscape scale (see forest plan). In patches centered on areas of past tree mortality, coarse woody debris can be up to 10 tons per acre. Litter and surface fuel is patchy, with fewer than 3 to 15 tons per acre in fuel loading on average over 30 to 70 percent of the area.</p>	<p>Desired Condition (TERR-MMC-DC) 05 Same as Alternative B.</p>	<p>Desired Condition (TERR-MMC-DC) 05 Same as Alternative B.</p>
<p>Desired Condition (TERR-MMC-DC) 06 At the fine scale, irregularly shaped groups of trees and widely spaced trees are variably spaced with some tight clumps. Vigorous shrub cover varies from 10 to 60 percent of the area. Openings with less than 10 percent tree cover are in various shapes and intermixed with groups of trees. These openings make up 10-30 percent of the area, are typically less 0.5 acre, and contain a mix of grasses, forbs, and shrubs.</p>	<p>Desired Condition (TERR-MMC-DC) 06 Same as Alternative B.</p>	<p>Desired Condition (TERR-MMC-DC) 06 Same as Alternative B.</p>
<p>TERRESTRIAL ECOSYSTEMS – All Upper Montane Vegetation Types – <i>Desired Conditions</i></p>		
<p>Desired Condition (TERR-UPPR-DC) 01 At the landscape scale, fire is a key ecological process in upper montane landscapes, restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor. Fires occur regularly to irregularly, depending on vegetation type. Fires in this zone burn with low, moderate, or mixed severity, with dispersed patches of high severity (i.e., greater than 75 percent basal area mortality) generally less than 10 acres and rarely greater than 200 to 250 acres. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent.</p>	<p>Desired Condition (TERR-UPPR-DC) 01 Same as Alternative B.</p>	<p>Desired Condition (TERR-UPPR-DC) 01 Same as Alternative B.</p>

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Red Fir – <i>Desired Conditions</i>		
Desired Condition (TERR-RFIR-DC) 01 At the landscape scale, the red fir forest type is part of a heterogeneous mosaic of tree species and vegetation structures (tree density, size, age and shrub cover), with patches of Jeffrey pine, lodgepole, other forest types, and meadows. It is dominated by red fir trees, with varying amounts of white fir, Jeffrey pine, western white pine, lodgepole pine and sometimes mountain hemlock.	Desired Condition (TERR-RFIR-DC) 01 Same as Alternative B.	Desired Condition (TERR-RFIR-DC) 01 Same as Alternative B.
Desired Condition (TERR-RFIR-DC) 02 Fires occur every 25 to 80 years as a key ecological process in red fir forests. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity.	Desired Condition (TERR-RFIR-DC) 02 Same as Alternative B.	Desired Condition (TERR-RFIR-DC) 02 Same as Alternative B.
Desired Condition (TERR-RFIR-DC) 03 At the landscape scale, areas dominated by medium and large-diameter trees and low to moderate canopy cover (between 10 and 60 percent) comprise most of the landscape (see forest plan). Trees are denser in some locations such as north-facing slopes and canyon bottoms, near meadows, or where snow accumulates. Early seral vegetation, shrubs, grasses, herbaceous plants, tree seedlings or saplings, mostly occur in very small areas, intermixed within forest stands or patches.	Desired Condition (TERR-RFIR-DC) 03 Same as Alternative B.	Desired Condition (TERR-RFIR-DC) 03 Same as Alternative B.
Desired Condition (TERR-RFIR-DC) 04 At the landscape scale, shrubs, grasses and young trees grow in patches of dead and dying trees with abundant snags and large logs.	Desired Condition (TERR-RFIR-DC) 04 Same as Alternative B.	Desired Condition (TERR-RFIR-DC) 04 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Desired Condition (TERR-RFIR-DC) 05 At the mid- to fine scale, trees of different sizes and ages are variably spaced and comprise an irregular, uneven-aged forest. Individual trees are variably spaced and interspersed with some denser tree clusters and open canopy gaps. Tree stocking (basal area) is highly variable, ranging from 50 to 350 square feet per acre with most areas having fewer than 250 square feet per acre (see forest plan). Numbers of seedlings and saplings are sufficient to replace mature and old trees as they die, but are very patchy in distribution.</p>	<p>Desired Condition (TERR-RFIR-DC) 05 Same as Alternative B.</p>	<p>Desired Condition (TERR-RFIR-DC) 05 Same as Alternative B.</p>
<p>Desired Condition (TERR-RFIR-DC) 06 At the mid- to fine scale, small openings mostly less than 0.1 to 0.5 acre are intermixed within stands of trees; they make up 5 to 20 percent of the area within tree stands, have less than 10 percent tree cover, are irregularly shaped, and often contain herbaceous plants, shrubs, and tree seedlings and saplings. Some openings and the understory of some red fir patches have little to no understory plants but instead have a high diversity of mushrooms and other fungi.</p>	<p>Desired Condition (TERR-RFIR-DC) 06 Same as Alternative B.</p>	<p>Desired Condition (TERR-RFIR-DC) 06 Same as Alternative B.</p>
<p>Desired Condition (TERR-RFIR-DC) 07 At the mid- to fine scale, snags greater than 20 inches in diameter are distributed in patches. An average of 5 to 40 snags per 10 acres at the landscape scale (see forest plan) provide for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is distributed in patches and ranges from 1 to 10 tons per acre at the landscape scale (see forest plan). Litter and surface fuel is patchy with fewer than 5 to 20 tons per acre in fuel loading on average. There may be areas with no fuels and pockets of high fuel accumulation scattered irregularly.</p>	<p>Desired Condition (TERR-RFIR-DC) 07 Same as Alternative B.</p>	<p>Desired Condition (TERR-RFIR-DC) 07 Same as Alternative B.</p>

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Lodgepole Pine – <i>Desired Conditions</i>		
Desired Condition (TERR-LDGP-DC) 01 Lodgepole pine forests are highly variable throughout the landscape, occurring as open forests on dry sites at higher elevations, and as denser stands in pockets around meadows, lakes or where cold air accumulates. The lodgepole pine type is part of a heterogeneous mosaic of tree species with diverse structural conditions. It is dominated by lodgepole pine, with varying amounts of red fir, white fir, aspen, and sometimes white pines (such as western white pine).	Desired Condition (TERR-LDGP-DC) 01 Same as Alternative B.	Desired Condition (TERR-LDGP-DC) 01 Same as Alternative B.
Desired Condition (TERR-LDGP-DC) 02 Fires occur every 30 to 100 years as a key ecological process in lodgepole pine forest. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity.	Desired Condition (TERR-LDGP-DC) 02 Same as Alternative B.	Desired Condition (TERR-LDGP-DC) 02 Same as Alternative B.
Desired Condition (TERR-LDGP-DC) 03 The distribution and structure of wet lodgepole pine forests are variable, ranging from small patches of even-aged trees, with both closed and open canopies, to uneven-aged, irregular patches. Size and age class diversity is high within wet lodgepole pine stands. Individual trees are variably spaced with some tight groups. Irregularly shaped groups of large and intermediate trees are variably sized, with some overlapping tree crowns. Smaller trees are randomly distributed.	Desired Condition (TERR-LDGP-DC) 03 Same as Alternative B.	Desired Condition (TERR-LDGP-DC) 03 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Desired Condition (TERR-LDGP-DC) 04 In wet lodgepole pine forests, areas dominated by medium- and large-diameter trees comprise more than 45 percent of the landscape (see forest plan). Tree stocking (basal area) is highly variable, ranging from 50 to 280 square feet per acre, with most less than 150 square feet per acre (see forest plan). Canopy cover ranges from 20 to 70 percent but is generally 50 percent. Small openings with less than 10 percent tree cover are irregular in shape, and make up from 5 to 20 percent of the area and contain a mix of grasses, herbaceous plants, and shrubs. Sufficient tree regeneration in openings provides for stand replacement.</p>	<p>Desired Condition (TERR-LDGP-DC) 04 Same as Alternative B.</p>	<p>Desired Condition (TERR-LDGP-DC) 04 Same as Alternative B.</p>
<p>Desired Condition (TERR-LDGP-DC) 05 In wet lodgepole pine forests, large snag densities are between 5 and 40 snags per 10 acres at the landscape scale (see forest plan). Snags are well distributed, highly irregular in spacing, and provide for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is well distributed but irregular in spacing and ranges from 1 to 20 tons per acre at the landscape scale (see forest plan). Some small areas contain very high fuel loading of up to 30 tons per acre and other areas have fewer than 5 tons per acre.</p>	<p>Desired Condition (TERR-LDGP-DC) 05 Same as Alternative B.</p>	<p>Desired Condition (TERR-LDGP-DC) 05 Same as Alternative B.</p>
<p>Desired Condition (TERR-LDGP-DC) 06 The distribution and structure of dry lodgepole pine forests are variable but typically open, with irregular patches of trees of different ages and generally few overlapping tree crowns. Smaller trees are randomly distributed. Tree groups may contain other tree species such as western white pine. Regenerating trees in suitable but irregularly distributed sites eventually create new stands.</p>	<p>Desired Condition (TERR-LDGP-DC) 06 Same as Alternative B.</p>	<p>Desired Condition (TERR-LDGP-DC) 06 Same as Alternative B.</p>

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-LDGP-DC) 07 In dry lodgepole pine forests, areas dominated by medium- and large-diameter trees comprise more than 60 percent of the landscape (see forest plan). Canopy cover is generally 10 to 40 percent but may exceed 40 percent in small patches and moist microsites (see forest plan).	Desired Condition (TERR-LDGP-DC) 07 Same as Alternative B	Desired Condition (TERR-LDGP-DC) 07 Same as Alternative B
Desired Condition (TERR-LDGP-DC) 08 Within dry lodgepole pine patches, individual trees are variably and often widely spaced. Tree stocking (basal area) is highly variable with most stands having around 120 square feet per acre but ranging from 20 to 200 square feet per acre. Small openings with less than 10 percent tree cover are irregular in shape and make up from 10 to 50 percent of the area and contain a mix of bare ground, rock, grasses, herbaceous plants and shrubs.	Desired Condition (TERR-LDGP-DC) 08 Same as Alternative B.	Desired Condition (TERR-LDGP-DC) 08 Same as Alternative B.
Desired Condition (TERR-LDGP-DC) 09 In dry lodgepole stands, the understory can contain between 0 to 40 percent shrub cover and on very dry, cold rocky sites there may be no shrub cover.	Desired Condition (TERR-LDGP-DC) 09 Same as Alternative B.	Desired Condition (TERR-LDGP-DC) 09 Same as Alternative B.
Desired Condition (TERR-LDGP-DC) 10 In dry lodgepole pine forests, large snag densities are between 2 to 25 snags per 10 acres at the landscape scale (see forest plan). Snags are well distributed, highly irregular in spacing, and provide for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is well distributed but highly irregular in spacing, ranging from 1 to 10 tons per acre at the landscape scale (see forest plan). Surface fuel loads are highly variable and patchy. Some small areas contain higher fuel loading of up to 15 tons per acre and most areas have fewer than 8 tons per acre.	Desired Condition (TERR-LDGP-DC) 10 Same as Alternative B.	Desired Condition (TERR-LDGP-DC) 10 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Upper Montane Jeffrey Pine – Desired Conditions		
Desired Condition (TERR-JEFF-DC) 01 At the landscape scale, the Jeffrey pine type is part of a heterogeneous mosaic of upper montane forests, shrublands, and other vegetation types. Forests are dominated by Jeffrey pine trees and are generally open. Open-canopied stands dominate the landscape, with generally less than 10 percent of the area having more than 40 percent canopy cover. Open canopies allow shade-intolerant Jeffrey pine tree regeneration.	Desired Condition (TERR-JEFF-DC) 01 Same as Alternative B.	Desired Condition (TERR-JEFF-DC) 01 Same as Alternative B.
Desired Condition (TERR-JEFF-DC) 02 Fire is a key ecological process, creating a diversity of vegetation types, maintaining understory plant diversity and lowering surface fuels. Fires occur frequently, every 10 to 15 years, with mostly low and moderate vegetation burn severity.	Desired Condition (TERR-JEFF-DC) 02 Same as Alternative B.	Desired Condition (TERR-JEFF-DC) 02 Same as Alternative B.
Desired Condition (TERR-JEFF-DC) 03 At the mid-scale, Jeffrey pine forests are primarily composed of mostly open canopies, with variable patches of trees, scattered individual trees, and open canopy gaps.	Desired Condition (TERR-JEFF-DC) 03 Same as Alternative B.	Desired Condition (TERR-JEFF-DC) 03 Same as Alternative B.
Desired Condition (TERR-JEFF-DC) 04 At the mid-scale, Jeffrey pine forest is composed predominantly of vigorous trees, but declining trees are an important component, providing wildlife nesting and denning habitat, future production of snags, down logs, and other coarse woody debris.	Desired Condition (TERR-JEFF-DC) 04 Same as Alternative B.	Desired Condition (TERR-JEFF-DC) 04 Same as Alternative B.
Desired Condition (TERR-JEFF-DC) 05 At the mid-scale, insects and pathogens like dwarf mistletoe, <i>Annosus</i> and <i>Armillaria</i> root diseases, and Jeffrey pine beetle, occur at background levels and are restricted to individual stands. Witches' brooms provide habitat for wildlife species.	Desired Condition (TERR-JEFF-DC) 05 Same as Alternative B.	Desired Condition (TERR-JEFF-DC) 05 Same as Alternative B.
Desired Condition (TERR-JEFF-DC) 06 At the fine scale, size and age class diversity is high within Jeffrey pine stands. Individual large trees or tree groups provide nesting and denning habitat for wildlife.	Desired Condition (TERR-JEFF-DC) 06 Same as Alternative B.	Desired Condition (TERR-JEFF-DC) 06 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-JEFF-DC) 07 At the fine scale, openings of various shapes surround and are intermixed with trees. These gaps make up from 10 to 70 percent of the area, are typically less than 0.2 to 0.5 acre, and contain herbaceous plants, shrubs and tree regeneration.	Desired Condition (TERR-JEFF-DC) 07 Same as Alternative B.	Desired Condition (TERR-JEFF-DC) 07 Same as .Alternative B.
TERRESTRIAL ECOSYSTEMS – Montane Chaparral – <i>Desired Conditions</i>		
Desired Condition (TERR-MCHP-DC) 01 Chaparral consists of native shrub and understory species that reflect the natural range of variation for the site. The chaparral vegetation type is composed of varying age classes and densities that protect against accelerated erosion, with 2 to 20 percent of the type in early seral grass and herbaceous cover, 5 to 20 percent in native herbs and shrubs, and 70 to 95 percent in dense shrubs.	Desired Condition (TERR-MCHP-DC) 01 Same as Alternative B.	Desired Condition (TERR-MCHP-DC) 01 Same as Alternative B.
Desired Condition (TERR-MCHP-DC) 02 Chaparral is in a constant state of transition from young to older stages and back again, with fire as the primary disturbance. High-severity fires that kill most aboveground stems occur on average every 35 to 100 years. The fire return interval is long enough to allow the soil seed bank of uniquely adapted plants that follow fire to be maintained over short and long terms. Fuels are able to accumulate sufficiently in areas to carry fire in the areas of fire-adapted plants. Invasive nonnative plants do not dominate between fires.	Desired Condition (TERR-MCHP-DC) 02 Same as Alternative B.	Desired Condition (TERR-MCHP-DC) 02 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Subalpine and Alpine – <i>Desired Conditions</i>		
Desired Condition (TERR-ALPN-DC) 01 Subalpine woodlands are highly variable in structure and composition. Diverse patch types vary from open woodlands with scattered trees to small, dense groves.	Desired Condition (TERR-ALPN-DC) 01 Same as Alternative B.	Desired Condition (TERR-ALPN-DC) 01 Same as Alternative B.
Desired Condition (TERR-ALPN-DC) 02 Fires occur infrequently, generally once every 100 years or longer, are mostly very small, and burn with mixed severity. Fire intensity is highly variable, but crown fires are usually limited in size.	Desired Condition (TERR-ALPN-DC) 02 Same as Alternative B.	Desired Condition (TERR-ALPN-DC) 02 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-ALPN-DC) 03 Subalpine woodlands are resilient to insects, diseases, fire, wind, and climate change. High-elevation white pines (whitebark pine, limber pine, and foxtail pine) are healthy and vigorous, with a low incidence of white pine blister rust, and resilient to moisture stress and drought. White pine blister rust-resistant trees are regenerating, and populations of high-elevation white pines have the potential to expand above the tree line.	Desired Condition (TERR-ALPN-DC) 03 Same as Alternative B.	Desired Condition (TERR-ALPN-DC) 03 Same as Alternative B.
Desired Condition (TERR-ALPN-DC) 04 Mature cone-bearing whitebark pine trees are spatially well distributed to produce and protect natural regeneration and conserve genetic diversity.	Desired Condition (TERR-ALPN-DC) 04 Same as Alternative B.	Desired Condition (TERR-ALPN-DC) 04 Same as Alternative B.
Desired Condition (TERR-ALPN-DC) 05 Alpine ecosystems are resilient to climate change, and fires are small and occur infrequently.	Desired Condition (TERR-ALPN-DC) 05 Same as Alternative B.	Desired Condition (TERR-ALPN-DC) 05 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS –Pinyon-Juniper – Desired Conditions		
Desired Condition (TERR-PINY-DC) 01 Pinyon-juniper types have a mosaic of trees and open areas that provide wildlife habitat, contribute to functional soils, and are resilient to disturbances such as fire, invasive species, insects, disease and climate change.	Desired Condition (TERR-PINY-DC) 01 Same as Alternative B.	Desired Condition (TERR-PINY-DC) 01 Same as Alternative B.
Desired Condition (TERR-PINY-DC) 02 Fire frequency and severity is within the natural range of variation.	Desired Condition (TERR-PINY-DC) 02 Same as Alternative B.	Desired Condition (TERR-PINY-DC) 02 Same as Alternative B.
Desired Condition (TERR-PINY-DC) 03 Plant litter and coarse woody debris are present in sufficient quantities to resist accelerated soil erosion and promote nutrient cycling, water retention, and the microclimate conditions necessary for pinyon seed germination. Biological soil crusts are present to improve nutrient cycling and stabilize soils, especially in sandier soils.	Desired Condition (TERR-PINY-DC) 03 Same as Alternative B.	Desired Condition (TERR-PINY-DC) 03 Same as Alternative B.
Desired Condition (TERR-PINY-DC) 04 Pinyon pine regeneration and recruitment ensure persistence of this vegetation type.	Desired Condition (TERR-PINY-DC) 04 Same as Alternative B.	Desired Condition (TERR-PINY-DC) 04 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-PINY-DC) 05 Mature pinyon pines provide opportunities for traditional collecting of pinyon nuts.	Desired Condition (TERR-PINY-DC) 05 Same as Alternative B.	Desired Condition (TERR-PINY-DC) 05 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS –Pinyon-Juniper – Guidelines		
Guideline SQF (TERR-PINY-GDL) 01 Include appropriately sized patches of undisturbed vegetation in project designs to minimize nonnative species spread and maximize native species regeneration.	Guideline SQF (TERR-PINY-GDL) 01 Same as Alternative B.	Guideline SQF (TERR-PINY-GDL) 01 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Sagebrush – Desired Conditions		
Desired Condition (TERR-SAGE-DC) 01 The sagebrush type has a diversity of age classes, stand structure, cover classes and native understory composition.	Desired Condition (TERR-SAGE-DC) 01 Same as Alternative B.	Desired Condition (TERR-SAGE-DC) 01 Same as Alternative B.
Desired Condition (TERR-SAGE-DC) 02 Sagebrush ecosystems are resilient to fire and other disturbances including grazing, recreation, invasive species (including cheatgrass) and climate change.	Desired Condition (TERR-SAGE-DC) 02 Same as Alternative B.	Desired Condition (TERR-SAGE-DC) 02 Same as Alternative B.
Desired Condition (TERR-SAGE-DC) 03 Grazed areas have or are trending toward satisfactory soils condition, functional hydrology and biotic integrity. Sagebrush ecosystems contain all key elements and conditions, including sagebrush regeneration and recruitment, ecosystem productivity, native perennial grass and forb cover, biological soil crusts, and symbiotic fungal associations.	Desired Condition (TERR-SAGE-DC) 03 Same as Alternative B.	Desired Condition (TERR-SAGE-DC) 03 Same as Alternative B.
Desired Condition (TERR-SAGE-DC) 04 Fire occurs as a natural process within the natural range of variation, generally burning in small extents. Fires occur infrequently, generally every 40 to 80 years or longer.	Desired Condition (TERR-SAGE-DC) 04 Same as Alternative B.	Desired Condition (TERR-SAGE-DC) 04 Same as Alternative B.
Desired Condition (TERR-SAGE-DC) 05 Where nonnative annual grasses exist in sagebrush vegetation communities, the native species persist with adequate structural and functional diversity including shrubs, perennial bunchgrasses, and forbs.	Desired Condition (TERR-SAGE-DC) 05 Same as Alternative B.	Desired Condition (TERR-SAGE-DC) 05 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Xeric Shrub – <i>Desired Conditions</i>		
Desired Condition SQF (TERR-XER-DC) 01 Xeric shrub vegetation is a mosaic of diverse ecological types with native shrubs and grasses, commonly sagebrush, saltbush, and goldenbush in various age classes and patch sizes.	Desired Condition (TERR-XER-DC) 01 Same as Alternative B.	Desired Condition (TERR-XER-DC) 01 Same as Alternative B.
Desired Condition SQF (TERR-XER-DC) 02 Vegetation conditions are resilient to natural and human disturbances, such as grazing, flooding, fire, invasive species, and climate change.	Desired Condition (TERR-XER-DC) 02 Same as Alternative B.	Desired Condition (TERR-XER-DC) 02 Same as Alternative B.
Desired Condition SQF (TERR-XER-DC) 03 Fires are within the natural range of variation.	Desired Condition (TERR-XER-DC) 03 Same as Alternative B.	Desired Condition (TERR-XER-DC) 03 Same as Alternative B.
Desired Condition SQF (TERR-XER-DC) 04 Flooding event frequency and severity is within the natural range of variation.	Desired Condition (TERR-XER-DC) 04 Same as Alternative B.	Desired Condition (TERR-XER-DC) 04 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Xeric Shrub – <i>Standards</i>		
Standard SQF (TERR-XER-STD) 01 Restoration projects in xeric shrub must include design measures to minimize damage to biological soil crusts with the purpose of maintaining areas resistant to non-native plant invasions.	Standard SQF (TERR-XER-STD) 01 Same as Alternative B.	Standard SQF (TERR-XER-STD) 01 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Old Growth – <i>Desired Conditions</i>		
Desired Condition (TERR-OLD-DC) 01 The composition, structure, and functions of old forests and surrounding landscapes are resilient to fire, drought, insects, pathogens, and climate change. Fire occurs as a key ecological process in forest types that are adapted to fire, creating, restoring and maintaining ecosystem resilience and fire-related composition and structure.	Desired Condition (TERR-OLD-DC) 01 Same as Alternative B.	Desired Condition (TERR-OLD-DC) 01 Same as Alternative B.
Desired Condition (TERR-OLD-DC) 02 The landscape contains a mosaic of vegetation types and structures that provide foraging and breeding habitat, movement, and connectivity for a variety of old forest-associated species.	Desired Condition (TERR-OLD-DC) 02 Same as Alternative B.	Desired Condition (TERR-OLD-DC) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-OLD-DC) 03 Between 40 and 80 percent of the forested landscape contains old forest areas. Old forest areas are clumps and patches of old forest components such as old trees, snags, and large downed logs. These areas are irregularly distributed across the landscape and interspersed with stands of younger trees, shrubs, meadows, other herbaceous vegetation, and unvegetated patches.	Desired Condition (TERR-OLD-DC) 03 Same as Alternative B.	Desired Condition (TERR-OLD-DC) 03 Same as Alternative B.
Desired Condition (TERR-OLD-DC) 04 The number and density of old trees vary by topographic position and soil moisture. In general, more large and old trees are found on moister sites; on lower slopes, bottoms, and north and east aspects, especially where soils are deeper. Large trees are well distributed but are often clumpy. The densities vary by forest type as shown in the forest plan. Trees greater than 40 inches in diameter, generally over 150 years old, represent the oldest trees, and comprise a significant proportion of large and old trees. In many areas of high soil productivity, trees grow to large sizes (around 30 inches in diameter) in fewer than 100 years. On low and very low soil productivity sites, the oldest trees may be smaller in diameter. Sufficient numbers of younger trees are present to provide for recruitment of old trees over time.	Desired Condition (TERR-OLD-DC) 04 Same as Alternative B.	Desired Condition (TERR-OLD-DC) 04 Same as Alternative B.
Desired Condition (TERR-OLD-DC) 05 Old forests are composed of both vigorous trees and decadent trees. Clumps of large trees, snags, large logs, and decadent older trees are maintained on the landscape in sufficient numbers to benefit wildlife and are distributed throughout the planning area, considering constraints imposed by climate change, fire, insects, disease, and drought.	Desired Condition (TERR-OLD-DC) 05 Same as Alternative B.	Desired Condition (TERR-OLD-DC) 05 Same as Alternative B.
Desired Condition (TERR-OLD-DC) 06 Large snags are scattered across the landscape, generally occurring in clumps rather than uniformly and evenly distributed, meeting the needs of species that use snags and providing for future downed logs.	Desired Condition (TERR-OLD-DC) 06 Same as Alternative B.	Desired Condition (TERR-OLD-DC) 06 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-OLD-DC) 07 Coarse woody debris is distributed in patches and the density of large downed logs varies by vegetation type. Surface dead wood levels are sufficient to provide for wildlife and legacy soil microbial populations.	Desired Condition (TERR-OLD-DC) 07 Same as Alternative B.	Desired Condition (TERR-OLD-DC) 07 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Old Growth – <i>Guidelines or Standards</i>		
Guideline (TERR-OLD-GDL) 01 When large tree densities meet desired condition levels, thinning to increase heterogeneity and resilience should emphasize retention of the oldest and largest trees, especially pines and black oaks. Large trees with deformities, broken tops, large branches, and cavities should be retained for wildlife habitat whenever possible. Exceptions: <ul style="list-style-type: none"> • Does not apply in community buffers where there is no overlap with WHMA • Does not apply to CWPZ where there is no overlap the WHMA 	Standard (TERR-OLD-STD) 01 When large tree densities meet desired condition levels, thinning to increase heterogeneity and resilience must retain the oldest and largest trees, especially pines and black oaks. Large trees with deformities, broken tops, large branches, and cavities are retained for wildlife habitat.	Guideline (TERR-OLD-GDL) 01 When large tree densities meet desired condition levels, thinning to increase heterogeneity and resilience should emphasize retention of the oldest and largest trees, especially pines and black oaks. Large trees with deformities, broken tops, large branches, and cavities should be retained for wildlife habitat whenever possible. Exceptions: <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ
Guideline (TERR-OLD-GDL) 02 Firing patterns, burn unit layout, and other firing and holding methods during burning should limit the killing of large old trees and loss of very large snags. Consider preventing delayed tree mortality caused by smoldering at the base of large old trees and consider constructing fireline around large old trees and very large snags to reduce the risk of tree ignition while addressing firefighter safety. Limit fire intensity in areas with large old trees and very large snags where possible. Exceptions: <ul style="list-style-type: none"> • Does not apply in community buffers where there is no overlap with WHMA 	Guideline (TERR-OLD-GDL) 01 Firing patterns, burn unit layout, and other firing and holding methods during burning should limit the killing of large old trees and loss of very large snags identified as important to at-risk species. Consider preventing delayed tree mortality caused by smoldering at the base of identified large old trees and consider constructing fireline around large old trees and very large snags to reduce the risk of tree ignition while addressing firefighter safety. Limit fire intensity in areas with large old trees and very large snags where possible.	Guideline (TERR-OLD-GDL) 02 Firing patterns, burn unit layout, and other firing and holding methods during burning using hand-based ignition techniques should limit the killing of large old trees and loss of very large snags. Consider preventing delayed tree mortality caused by smoldering at the base of large old trees and consider constructing fireline around large old trees and very large snags that are determined to have high wildlife value for at-risk species to reduce the risk of tree ignition while addressing firefighter safety. Limit fire intensity in areas with large old trees and very large snags where possible while not compromising the ability to restore fire to large areas. Exceptions: <ul style="list-style-type: none"> • Does not apply in community buffers

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Alternative B	Alternative C and E	Alternative D
TERRESTRIAL ECOSYSTEMS – Complex Early Seral Habitats – <i>Desired Conditions</i>		
Desired Condition (TERR-CES-DC) 01 Complex early seral habitat contains a sufficient abundance and distribution of snags (especially large-diameter snags) for cavity-nesting wildlife, variable densities of native shrubs and herbaceous plants, and resprouting oak and aspen where they occur. Exceptions: <ul style="list-style-type: none"> Does not apply in community buffers where there is no overlap with WHMA. Does not apply to CWPZ where there is no overlap the WHMA. 	Desired Condition (TERR-CES-DC) 01 Same as Alternative B but with no exceptions.	Desired Condition (TERR-CES-DC) 01 Same as Alternative B with Exceptions: <ul style="list-style-type: none"> Does not apply in community buffers. Does not apply in CWPZ.
Desired Condition (TERR-CES-DC) 02 Snags, logs, and live trees are widely and variably distributed where vegetation has been severely burned (greater than 75 percent mortality) in large patches (greater than 100 acres) to provide habitat while also considering the need for other resource objectives. Such resource objectives could include removal of hazard or salvage trees, reforestation to contribute to future forested conditions and carbon carrying capacity, and strategic fuel treatment, including management of fuels in and adjacent to community wildfire protection zones. Exceptions: <ul style="list-style-type: none"> Does not apply in community buffers where there is no overlap with WHMA. Does not apply to CWPZ where there is no overlap the WHMA. 	Desired Condition (TERR-CES-DC) 02 Same as Alternative B but with no exceptions.	Desired Condition (TERR-CES-DC) 02 Same as Alternative B with Exceptions: <ul style="list-style-type: none"> Does not apply in community buffers. Does not apply in CWPZ.
TERRESTRIAL ECOSYSTEMS – Complex Early Seral Habitats – <i>Guidelines</i>		
Guideline (TERR-CES-GDL) 01 Post-disturbance restoration projects should be designed to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover.	Guideline (TERR-CES-GDL) 01 Same as Alternative B.	Guideline (TERR-CES-GDL) 01 Same as Alternative B.
Guideline (TERR-CES-GDL) 02 Post-disturbance restoration projects should be designed to protect and restore important wildlife habitat.	Guideline (TERR-CES-GDL) 02 Same as Alternative B.	Guideline (TERR-CES-GDL) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Guideline (TERR-CES-GDL) 03 Post-disturbance restoration projects should be designed to manage the development of fuel profiles over time.	Guideline (TERR-CES-GDL) 03 Post-disturbance restoration projects should be designed to manage the development of fuel profiles over time and retain large logs and other coarse woody debris within the natural range of variation.	Guideline (TERR-CES-GDL) 03 Same as Alternative B.
Guideline (TERR-CES-GDL) 04 Post-disturbance restoration projects should be designed to recover the value of timber killed or severely injured by the disturbance.	Guideline (TERR-CES-GDL) 04 No similar Guideline.	Guideline (TERR-CES-GDL) 04 Same as Alternative B.
Guideline (TERR-CES-GDL) 05 Large fires with more than 1,000 acres of contiguous blocks of high vegetation burn severity in forest vegetation types (ponderosa pine, Jeffery pine, dry or mesic mixed conifer, and red fir) should retain at least 10 percent of the high vegetation burn severity area without harvest to provide areas of complex early seral habitat. Exceptions: <ul style="list-style-type: none"> • Does not apply in community buffers where there is no overlap with WHMA. • Does not apply to CWPZ where there is no overlap the WHMA. 	Guideline (TERR-CES-GDL) 05 Large fires with more than 1,000 acres of contiguous blocks of high vegetation burn severity in forest vegetation types (ponderosa pine, Jeffery pine, dry or mesic mixed conifer, and red fir) should retain at least 20 percent of the high vegetation burn severity area without harvest to provide areas of complex early seral habitat. Salvage activities are limited to areas of concern for public safety, such as the management of fuels in the community wildfire protection zone.	Guideline (TERR-CES-GDL) 05 Large fires with more than 1,000 acres of contiguous blocks of high vegetation burn severity in forest vegetation types (ponderosa pine, Jeffery pine, dry or mesic mixed conifer, and red fir) should retain at least 5 percent of the high vegetation burn severity area without harvest to provide areas of complex early seral habitat. Exceptions: <ul style="list-style-type: none"> • Does not apply to community buffers. • Does not apply to CWPZ.
TERRESTRIAL ECOSYSTEMS – Aspen – Desired Conditions		
Desired Condition (TERR-ASPN-DC) 01 The structure, function, and composition of aspen stands are within the natural range of variation; there is a wide age and size class distribution of aspen and it is contributing to habitat and biodiversity. Aspen is successfully regenerating.	Desired Condition (TERR-ASPN-DC) 01 Same as Alternative B.	Desired Condition (TERR-ASPN-DC) 01 Same as Alternative B.
Desired Condition (TERR-ASPN-DC) 02 Fire occurs as a key ecological process in aspen stands, maintaining ecosystem resilience and promoting aspen regeneration. Fire or silvicultural activity reduces conifer encroachment and competition. Aspen stands are resilient to and periodically regenerated by moderate to high-severity fires or other disturbances, allowing for potential expansion.	Desired Condition (TERR-ASPN-DC) 02 Same as Alternative B.	Desired Condition (TERR-ASPN-DC) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (TERR-ASPEN-DC) 03 Aspen groves contribute to social and economic sustainability by supporting recreational, cultural, and economic opportunities. Aspen groves add visual interest, variety, and contrasts in the landscape, providing spiritual respite and enjoyment.	Desired Condition (TERR-ASPEN-DC) 03 Same as Alternative B.	Desired Condition (TERR-ASPEN-DC) 03 Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Aspen – Standards		
Standard (TERR-ASPEN-STD) 01 Browsing pressure should be reduced in aspen stands where aspen regeneration is not recruiting to larger size classes or aspen regeneration is limited due to browsing impacts.	Standard (TERR-ASPEN-STD) 01 Exclude browsing in aspen stands where aspen regeneration is not recruiting to larger size classes or aspen expansion is limited due to browsing impacts.	Standard (TERR-ASPEN-STD) Same as Alternative B.
TERRESTRIAL ECOSYSTEMS – Aspen – Guidelines		
Guideline (TERR-ASPEN-GDL) 01 Where pile burning of material from conifer removal is desired, piles should be removed from overstory aspen tree roots where possible or be kept at least 15 feet away from large aspen trees to limit damage to aspen trunks and roots. Larger piles (more than 10 feet pile width) should be placed at least 20 feet away from aspen trunks to minimize damage to aspen.	Guideline (TERR-ASPEN-GDL) 01 Same as Alternative B.	Guideline (TERR-ASPEN-GDL) 01 Same as Alternative B.
Guideline (TERR-ASPEN-GDL) 02 During treatment to manage or restore aspen, aspen trees with historical carvings should be protected or recorded and the historical value appropriately documented.	Guideline (TERR-ASPEN-GDL) 02 Same as Alternative B.	Guideline (TERR-ASPEN-GDL) 02 Same as Alternative B.
Guideline (TERR-ASPEN-GDL) 03 Near developed areas, conifer removal (mechanical or hand thinning) should be the primary initial restorative treatment for aspen stands. To manage residual fuel loading where cut material cannot be removed from the stand, pile burning may be used.	Guideline (TERR-ASPEN-GDL) 03 In all areas, fire restoration (such as prescribed fire) should be the primary restoration treatment for aspen stands. Conifer removal (mechanical or hand thinning) should be limited to trees less than 24 inches diameter for aspen stands	Guideline (TERR-ASPEN-GDL) 03 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
<p>Guideline (TERR-ASPN-GDL) 04 The number and size of conifers removed to enhance aspen should be based on the following long-term objectives:</p> <ul style="list-style-type: none"> a. maximize direct and indirect light (this may require treating beyond the existing aspen stand perimeter); b. allow aspen expansion; c. reduce seed sources of shade-tolerant conifers; d. maintain fuel loads, including reduced coarse woody debris, that promote resilient aspen stands to allow future prescribed burning; and e. promote wildlife habitat, plant assemblages, and water yields typically found in functioning aspen communities. 	<p>Guideline (TERR-ASPN-GDL) 04 Conifers removed to enhance aspen should meet the following long-term objectives:</p> <ul style="list-style-type: none"> a. maximize direct and indirect light (this may require treating beyond the existing aspen stand perimeter); b. allow aspen expansion; c. create fuel loads that reflect functioning aspen stands to allow future prescribed burning; and d. promote wildlife habitat, plant assemblages, and water yields typically found in functioning aspen communities. 	<p>Guideline (TERR-ASPN-GDL) 04 Same as Alternative B.</p>
TERRESTRIAL ECOSYSTEMS – Special Habitats – <i>Desired Conditions</i>		
<p>Desired Condition (TERR-SH-DC) 01 The integrity of special habitats is maintained or improved from current conditions. Composition, diversity, and structure of unique plant assemblages are maintained in all areas, including those with multiple-use activities.</p>	<p>Desired Condition (TERR-SH-DC) 01 Same as Alternative B.</p>	<p>Desired Condition (TERR-SH-DC) 01 Same as Alternative B.</p>
<p>Desired Condition (TERR-SH-DC) 02 Microclimate or smaller scale habitat elements provide habitat and refugia for species with a specific geographic or restricted distribution.</p>	<p>Desired Condition (TERR-SH-DC) 02 Same as Alternative B.</p>	<p>Desired Condition (TERR-SH-DC) 02 Same as Alternative B.</p>
<p>Desired Condition (TERR-SH-DC) 03 Conditions remain suitable for long-term sustainability of the suite of native plants adapted to special habitats and their associated symbiotic associations, such as insect pollinators.</p>	<p>Desired Condition (TERR-SH-DC) 03 Same as Alternative B.</p>	<p>Desired Condition (TERR-SH-DC) 03 Same as Alternative B.</p>
TERRESTRIAL ECOSYSTEMS – Special Habitats – <i>Standards</i>		
<p>Standard (TERR-SH-STD) 01 At the project scale, evaluate and incorporate maintenance and enhancement needs for special habitats into project design and implementation.</p>	<p>Standard (TERR-SH-STD) 01 Same as Alternative B.</p>	<p>Standard (TERR-SH-STD) 01 Same as Alternative B.</p>

Table A-4. McKinley and Nelder Giant Sequoia Management Areas

Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – McKinley and Nelder Giant Sequoia Grove – <i>Desired Conditions</i>		
Desired Condition SNF (MA-GSG-DC) 01 The structure, composition, and function of the giant sequoia groves are within the natural range of variation. The groves are structurally heterogeneous and compositionally diverse, and provides habitat for a variety of plant and animal species.	Desired Condition SNF (MA-GSG-DC) 01 Same as Alternative B.	Desired Condition SNF (MA-GSG-DC) 01 Same as Alternative B.
Desired Condition SNF (MA-GSG-DC) 02 Fire occurs as a key ecological process in the giant sequoia groves, maintaining ecosystem integrity and function. Fires burn primarily at low to moderate severity with limited patches of high severity creating canopy gaps of variable sizes and shapes (generally less than 0.5 acre) and bare mineral soil to promote sequoia regeneration.	Desired Condition SNF (MA-GSG-DC) 02 Same as Alternative B.	Desired Condition SNF (MA-GSG-DC) 02 Same as Alternative B.
Desired Condition SNF (MA-GSG-DC) 03 Giant sequoias, especially large and old trees, are resilient to stressors including insects, pathogens, uncharacteristic wildfires, drought, and climate change.	Desired Condition SNF (MA-GSG-DC) 03 Same as Alternative B.	Desired Condition SNF (MA-GSG-DC) 03 Same as Alternative B.
Desired Condition SNF (MA-GSG-DC) 04 Giant sequoia is successfully regenerating and recruiting into older age classes.	Desired Condition SNF (MA-GSG-DC) 04 Same as Alternative B.	Desired Condition SNF (MA-GSG-DC) 04 Same as Alternative B.
Desired Condition SNF (MA-GSG-DC) 05 Giant sequoia groves provide a diverse array of natural, scenic, historic, and scientific resources for the benefit and enjoyment of current and future generations.	Desired Condition SNF (MA-GSG-DC) 05 Same as Alternative B.	Desired Condition SNF (MA-GSG-DC) 05 Same as Alternative B.
MANAGEMENT AREA – McKinley and Nelder Giant Sequoia Grove – <i>Guidelines</i>		
Guideline SNF (MA-GSG-GDL) 01 Within giant sequoia groves, thin conifers to increase heterogeneity and resilience, emphasizing retention of the oldest and largest trees such as giant sequoias and pines. Large trees with deformities, broken tops, large branches, and cavities should be retained for wildlife habitat whenever possible	Guideline SNF (MA-GSG-GDL) 01 Same as Alternative B.	Guideline SNF (MA-GSG-GDL) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Guideline SNF (MA-GSG-GDL) 02 Limit mortality of large and old giant sequoias during prescribed fire or when managing wildfires to meet resource objectives. Litter and duff should be removed at least 2 feet and shrubs and small trees at least 6 feet from the base of large and old sequoias (especially those containing cat faces) to limit fire impacts.	Guideline SNF (MA-GSG-GDL) 02 Same as Alternative B.	Guideline SNF (MA-GSG-GDL) 02 Same as Alternative B.
Guideline SNF (MA-GSG-GDL) 03 Ecological and hydrologic function of giant sequoia groves should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, and day use sites that have been identified as contributing to degradation of ecological or hydrologic function in giant sequoia groves should have corrective actions implemented where possible.	Guideline SNF (MA-GSG-GDL) 03 Same as Alternative B.	Guideline SNF (MA-GSG-GDL) 03 Same as Alternative B.
MANAGEMENT AREA – McKinley and Nelder Giant Sequoia Grove – Goals		
Goal SNF (MA-GSG-GOAL) 01 Work cooperatively with researchers and other organizations to develop appropriate ecological restoration measures in giant sequoia groves impacted by drought, bark beetle outbreaks, or uncharacteristic wildfire.	Goal SNF (MA-GSG-GOAL) 01 Same as Alternative B.	Goal SNF (MA-GSG-GOAL) 01 Same as Alternative B.
MANAGEMENT AREA – McKinley and Nelder Giant Sequoia Grove – Suitability		
Suitability SNF (MA-GSG-SUIT) 01. The following uses are not suitable in giant sequoia groves: <ul style="list-style-type: none"> • All forms of mineral entry including mineral or geothermal leasing. • Timber production, although harvest of timber is allowed for purposes of restoration and maintenance of desired conditions, or as needed for safety of the public or personnel. • Groundwater diversion or alteration. 	Suitability SNF (MA-GSG-SUIT) 01 Same as Alternative B.	Suitability SNF (MA-GSG-SUIT) 01 Same as Alternative B.

Table A-5. Wildlife Habitat Management Areas

Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – Wildlife Habitat Management Area – <i>Desired Conditions</i>		
Desired Condition (MA-WHMA-DC) 01 The Wildlife Habitat Management Area consists of resilient, well-distributed, well-connected ecosystems that provide sustainable habitat for old-forest associated species, including Fisher and California spotted owl.	N/A	N/A
Desired Condition (MA-WHMA-DC) 02 The Wildlife Habitat Management Area is characterized by higher concentrations of old forest. It includes some multi-storied canopy conditions, including some shade-tolerant understory trees such as firs and cedars, especially in drainages, swales and canyon bottoms and on north and east-facing slopes.	N/A	N/A
Desired Condition (MA-WHMA-DC) 03 The Wildlife Habitat Management Area complements aquatic and riparian areas and wilderness areas to provide habitat connectivity.	N/A	N/A
MANAGEMENT AREA – Wildlife Habitat Management Area – <i>Standard</i>		
Standard (MA-WHMA-STD) 01 Do not create large areas of open canopy habitat (vegetative cover less than 30 percent) that would completely sever mapped fisher linkage areas. Fuelbreaks that cross mapped fisher linkage areas will be designed to provide scattered pockets of vegetation to avoid creating barriers to fisher movement through the linkage. Exceptions: <ul style="list-style-type: none"> Does not apply to community buffers 	See SPEC-FSHR-STD 01 See Table A-12	See SPEC-FSHR-GDL-07 See Table A-12

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Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – Wildlife Habitat Management Area – Guidelines		
Guideline (MA-WHMA-GDL) 01 When planning vegetation and fuels reduction projects adjacent to mapped Fisher linkage areas, strategically manage vegetation continuity to reduce the risk of widespread crown fire Do not create large areas of open canopy habitat (vegetative cover less than 30 percent) that would limit fisher use of the linkage area. Exceptions: <ul style="list-style-type: none"> Does not apply in community buffers 	See SPEC-FSHR-GDL 01 See Table A-12	See SPEC-FSHR-GDL-01 See Table A-12
Guideline (MA-WHMA-GDL) 02 Prescribed fires should be designed to leave some unburned patches (up to 25 percent of total area within the burn perimeter) to provide heterogeneity and refugia for Fisher prey species, especially in larger burn units, if environmental conditions allow. Exceptions: <ul style="list-style-type: none"> Does not apply in community buffers 	See SPEC- FSHR-GDL 02 See Table A-12.	See SPEC-FSHR-GDL-02 See Table A-12.
Guideline (MA-WHMA-GDL) 03 Limit large areas of high-intensity fire during firing operations within key Fisher linkage areas. Exceptions: <ul style="list-style-type: none"> Does not apply in community buffers 	See SPEC- FSHR-GDL 04 See Table A-12.	See SPEC-FSHR-GDL-04 See Table A-12.
MANAGEMENT AREA – Focus Landscape – Desired Conditions		
N/A	N/A	Desired Condition (MA-FL-DC) 01 Focus Landscapes are large areas, generally from 40,000 to 100,000 acres in size, where vegetation conditions and associated potential wildfire behavior is managed to improve the resilience of vegetation to stressors.
N/A	N/A	Desired Condition (MA-FL-DC) 02 Focus landscapes are characterized by higher concentrations of old forest. The proportion of old forest in montane or upper montane landscapes meets or is trending towards vegetation desired conditions.

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Alternative B	Alternative C and E	Alternative D
N/A	N/A	Desired Condition (MA-FL-DC) 03 Vegetation conditions within focus landscapes are trending towards desired conditions in terms of vegetation composition, structure, and function.
N/A	N/A	Desired Condition (MA-FL-DC) 04 Safe and effective fuelbreaks are constructed and maintained along strategic ridgetops, roads, and areas with low fuels to provide tactical opportunities for fire management and to facilitate prescribed burning.

Table A-6. South Fork Wildlife Area

Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – South Fork Wildlife Area – <i>Desired Conditions</i>		
Desired Condition SQF (MA-SFW-DC) 01 Riparian woodlands are resilient and sustainable, containing mature cottonwoods, willows, and other associated riparian plants supporting native wildlife species.	Desired Condition SQF (MA-SFW-DC) 01 Same as Alternative B.	Desired Condition SQF (MA-SFW-DC) 01 Same as Alternative B.
Desired Condition SQF (MA-SFW-DC) 02 Ecological conditions within the South Fork Wildlife Area support occupancy and breeding of federally-listed at-risk species such as the southwestern willow flycatcher, least Bell's vireo, and yellow-billed cuckoo; and species of conservation concern such Kern red-winged blackbird.	Desired Condition SQF (MA-SFW-DC) 02 Same as Alternative B.	Desired Condition SQF (MA-SFW-DC) 02 Same as Alternative B.
Desired Condition SQF (MA-SFW-DC) 03 Recreation activities are managed to minimize effects to at-risk wildlife.	Desired Condition SQF (MA-SFW-DC) 03 Same as Alternative B.	Desired Condition SQF (MA-SFW-DC) 03 Same as Alternative B.
MANAGEMENT AREA – South Fork Wildlife Area – <i>Goals</i>		
Goals SQF (MA-SFW-GOAL) 01 Coordinate with State and Federal agencies, other partners, and private landowners to conduct or allow studies and research within the wildlife area.	Goals SQF (MA-SFW-GOAL) 01 Same as Alternative B	Goals SQF (MA-SFW-GOAL) 01 Same as Alternative B

Table A-7. Watersheds

Alternative B	Alternative C and E	Alternative D
WATERSHEDS – Forestwide – Desired Conditions		
Desired Condition (WTR-FW-DC) 01 Adequate quantity and timing of water flows support ecological structure and functions, including aquatic species diversity and riparian vegetation. Watersheds are resilient to changes in air temperatures, snowpack, timing of runoff, and other effects of climate change.	Desired Condition (WTR-FW-DC) 01 Same as Alternative B.	Desired Condition (WTR-FW-DC) 01 Same as Alternative B.
Desired Condition (WTR-FW-DC) 02 Water quality supports State-designated beneficial uses of water. Water quality is sustained at a level that retains the biological, physical, and chemical integrity of aquatic systems and benefits the survival, growth, reproduction, and migration of native aquatic and riparian species.	Desired Condition (WTR-FW-DC) 02 Same as Alternative B.	Desired Condition (WTR-FW-DC) 02 Same as Alternative B.
Desired Condition (WTR-FW-DC) 03 Watersheds are fully functioning or trending toward fully functioning and resilient; recover from natural and human disturbances at a rate appropriate with the capability of the site; and have a high degree of hydrologic connectivity laterally across the floodplain and valley bottom and vertically between surface and subsurface flows. Physical (geomorphic, hydrologic) connectivity and associated surface processes (such as runoff, flooding, in-stream flow regime, erosion, and sedimentation) are maintained and restored. Watersheds provide important ecosystem services such as high-quality water, recharge of streams and shallow groundwater, and maintenance of riparian communities. Watersheds sustain long-term soil productivity.	Desired Condition (WTR-FW-DC) 03 Same as Alternative B.	Desired Condition (WTR-FW-DC) 03 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (WTR-FW-DC) 04 Soil and vegetation functions in upland and riparian areas are sustained and resilient. Healthy soils provide the base for resilient landscapes and nutritive forage for browsing and grazing animals, and support timber production. Healthy upland and riparian areas support healthy fish and wildlife populations, enhance recreation opportunities, and maintain water quality.	Desired Condition (WTR-FW-DC) 04 Same as Alternative B.	Desired Condition (WTR-FW-DC) 04 Same as Alternative B.
WATERSHEDS – Forestwide – Goals		
Goals (WTR-FW-GOAL) 01 Coordinate with Tribes; local, State, and Federal agencies; adjacent landowners; and other interested parties on watershed restoration across ownership boundaries.	Goal (WTR-FW-GOAL) 01 Same as Alternative B.	Goal (WTR-FW-GOAL) 01 Same as Alternative B.
Goals (WTR-FW-GOAL) 02 Take a landscape- or watershed-scale approach to restoring aquatic and riparian ecosystems, integrating with recreation, range management, fuels, and vegetation management to efficiently use limited resources, including partnerships, and to effectively address climate change.	Goals (WTR-FW-GOAL) 02 Take a landscape- or watershed-scale approach to restoring aquatic and riparian ecosystems to effectively address climate change, including partnerships with Tribes; local, State, and Federal agencies; adjacent landowners; and other interested parties.	Goal (WTR-FW-GOAL) 02 Same as Alternative B.
WATERSHEDS – Forestwide – Objectives		
Objective (WTR-FW-OBJ) 01 At least 2 Priority watersheds will experience improvements allowing them to shift to a higher functioning condition class, as defined by the national Watershed Condition Framework, within 15 years of plan approval.	Objective (WTR-FW-OBJ) 01 Same as Alternative B.	Objective (WTR-FW-OBJ) 01 Same as Alternative B.
WATERSHEDS – Forestwide – Standards		
Standard (WTR-FW-STD) 01 Use best management practices as described in agency technical guides and handbooks to mitigate adverse impacts to soil and water resources during the planning and implementation of forest management activities.	Standard (WTR-FW-STD) 01 Same as Alternative B.	Standard (WTR-FW-STD) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Standard (WTR-FW-STD) 02 Restoration projects will not result in long-term degradation of aquatic and riparian conditions, including connectivity, at the watershed or subwatershed scale. Adverse effects from project activities are acceptable when they are short-term, site-scale, and support, or do not diminish, long-term recovery of aquatic and riparian resources.	Standard (WTR-FW-STD) 02 Same as Alternative B.	Standard (WTR-FW-STD) 02 Same as Alternative B.
Standard (WTR-FW-STD) 03 For exempt hydroelectric facilities on National Forest System lands, ensure that special use permit language provides adequate in-stream flow requirements to maintain, restore, or recover favorable ecological conditions for local riparian- and aquatic-dependent species.	Standard (WTR-FW-STD) 03 Same as Alternative B.	Standard (WTR-FW-STD) 03 Same as Alternative B.
Standard (WTR-FW-STD) 04 After restoration actions (including soil disturbance or seeding activities), limit subsequent soil-disturbing management activities until project objectives have been met.	Standard (WTR-FW-STD) 04 Same as Alternative B.	Standard (WTR-FW-STD) 04 Same as Alternative B.
Standard SQF (WTR-FW-STD) 05 Restore the watershed, through thinning, restoration of floodplain connectivity and shallow groundwater storage, to enhance instream flows.	Standard SQF (WTR-FW-STD) 05 Same as Alternative B.	Standard SQF (WTR-FW-STD) 05 Same as Alternative B.
WATERSHEDS – Forestwide – Guidelines		
Guideline (WTR-FW-GDL) 01 To secure instream flows needed to maintain, recover, and restore riparian resources, channel conditions, and aquatic habitat, cooperation with Federal, Tribal, State and local governments should occur during all basic Federal Energy Regulatory Commission, State and other authorized water use and water rights planning and relicensing on the national forests.	Guideline (WTR-FW-GDL) 01 Same as Alternative B.	Guideline (WTR-FW-GDL) 01 Same as Alternative B.

Table A-8. Watersheds – Riparian Conservation Area

Alternative B	Alternative C and E	Alternative D
WATERSHEDS – Riparian Conservation Areas – <i>Desired Conditions</i>		
Desired Condition (WTR-RCA-DC) 01 The connections of floodplains, channels, and water tables distribute flood flows and sustain diverse habitats.	Desired Condition (WTR-RCA-DC) 01 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 01 Same as Alternative B.
Desired Condition SQF (WTR-RCA-DC) 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native aquatic and riparian-dependent plant and animal species.	Desired Condition SQF (WTR-RCA-DC) 02 Same as Alternative B.	Desired Condition SQF (WTR-RCA-DC) 02 Same as Alternative B.
Desired Condition SNF (WTR-RCA-DC) 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native and nonnative aquatic and riparian-dependent plant and animal species.	Desired Condition SNF (WTR-RCA-DC) 02 Same as Alternative B.	Desired Condition SNF (WTR-RCA-DC) 02 Same as Alternative B.
Desired Condition (WTR-RCA-DC) 03 The distribution and health of biotic communities in special aquatic habitats perpetuates their unique functions and biological diversity.	Desired Condition (WTR-RCA-DC) 03 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 03 Same as Alternative B.
Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.	Desired Condition SQF (WTR-RCA-DC) 04 Same as Alternative B.	Desired Condition SQF (WTR-RCA-DC) 04 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
<p>Desired Condition SNF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired Condition SNF (WTR-RCA-DC) 04 Same as Alternative B.</p>	<p>Desired Condition SNF (WTR-RCA-DC) 04 Same as Alternative B.</p>
<p>Desired Condition (WTR-RCA-DC) 05 Riparian areas provide a range of substrates to sustain habitat for a variety of aquatic and terrestrial fauna within their natural capacity of the system.</p>	<p>Desired Condition (WTR-RCA-DC) 05 Same as Alternative B.</p>	<p>Desired Condition (WTR-RCA-DC) 05 Same as Alternative B.</p>
<p>Desired Condition (WTR-RCA-DC) 06 Soil structure and function is sustained to infiltrate and disperse water properly, withstand erosive forces, sustain favorable conditions of stream flow, and cycle nutrients. Associated water tables support riparian vegetation and restrict nonriparian vegetation.</p>	<p>Desired Condition (WTR-RCA-DC) 06 Same as Alternative B.</p>	<p>Desired Condition (WTR-RCA-DC) 06 Same as Alternative B.</p>
<p>Desired Condition (WTR-RCA-DC) 07 Key riparian processes and conditions (including slope stability and associated vegetation root strength, wood delivery to streams and floodplains, input of leaf and organic matter to aquatic and terrestrial systems, solar shading, microclimate, and water quality) operate consistently with local disturbance regimes.</p>	<p>Desired Condition (WTR-RCA-DC) 07 Same as Alternative B.</p>	<p>Desired Condition (WTR-RCA-DC) 07 Same as Alternative B.</p>

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Alternative B	Alternative C and E	Alternative D
Desired Condition (WTR-RCA-DC) 08 The condition of riparian vegetation, including riparian species composition, stand density, and fuel loading, is consistent with healthy riparian systems and reduces risks from high-intensity wildfire in the watershed.	Desired Condition (WTR-RCA-DC) 08 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 08 Same as Alternative B.
Desired Condition (WTR-RCA-C) 09 Riparian areas in frequent fire landscapes (such as montane areas) have low- to moderate-severity fire restored as an ecological process. Fire effects occur in a mosaic and supports restoration of ecological integrity, including ecosystem function, composition, structure, and resilience.	Desired Condition (WTR-RCA-DC) 09 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 09 Same as Alternative B.
Desired Condition (WTR-RCA-DC) 10 New introductions of invasive species are prevented. Where invasive species are adversely affecting the persistence of native species, the appropriate State and Federal wildlife agencies work to reduce impacts of invasive species to native populations.	Desired Condition (WTR-RCA-DC) 10 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 10 Same as Alternative B.
Desired Condition (WTR-RCA-DC) 11 Along all State-designated Wild and Heritage Trout waters, streamside vegetation provides stream shading and fish cover, based on capability of the site.	Desired Condition (WTR-RCA-DC) 11 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 11 Same as Alternative B.
Desired Condition (WTR-RCA-DC) 12 Spatial and temporal connectivity for riparian- and aquatic-dependent species is maintained within and between watersheds. Connectivity provides physically, chemically and biologically unobstructed movement for species survival, migration, and reproduction.	Desired Condition (WTR-RCA-DC) 12 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 12 Same as Alternative B.
Desired Condition (WTR-RCA-DC) 13 Native riparian vegetation is diverse, structurally complex, and provides food and cover to sustain fish and wildlife populations.	Desired Condition (WTR-RCA-DC) 13 Same as Alternative B.	Desired Condition (WTR-RCA-DC) 13 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
WATERSHEDS – Riparian Conservation Areas – Objectives		
Objective (WTR-RCA-OBJ) 01 Restore the structure and composition of at least 400 acres in riparian areas within 15 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change.	Objective SQF (WTR-RCA-OBJ) 01 Restore the structure and composition of at least 2000 acres in riparian areas within 15 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change.	Objective SQF (WTR-RCA-OBJ) 01 Restore the structure and composition of at least 1000 acres in riparian areas within 15 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change.
Objective (WTR-RCA-OBJ) 01 See above	Objective SNF (WTR-RCA-OBJ) 01 Restore the structure and composition of at least 4000 acres in riparian areas within 15 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change	Objective SNF (WTR-RCA-OBJ) 01 Restore the structure and composition of at least 1000 acres in riparian areas within 15 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change
WATERSHEDS – Riparian Conservation Areas – Goals		
Goal (WTR-RCA-GOAL) 01 Coordinate and collaborate with the State fish and wildlife agencies to address native aquatic species issues, including evaluating management and monitoring needs to address aquatic species requirements	Goal (WTR-RCA-GOAL) 01 Same as Alternative B.	Goal (WTR-RCA-GOAL) 01 Same as Alternative B.
Goal (WTR-RCA-GOAL) 02 Where aquatic invasive species are adversely affecting the persistence of aquatic native species, work with the appropriate State and Federal wildlife agencies work to reduce impacts of aquatic invasive species to native populations.	Goal (WTR-RCA-GOAL) 02 Same as Alternative B.	Goal (WTR-RCA-GOAL) 02 Same as Alternative B.
WATERSHEDS – Riparian Conservation Areas – Standards		
Standard (WTR-RCA-STD) 01 Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.	Standard (WTR-RCA-STD) 01 Same as Alternative B.	Standard (WTR-RCA-STD) 01 Same as Alternative B.
Standard (WTR-RCA-STD) 02 Limit pesticide applications to cases where project-level analysis indicates pesticide applications are consistent with riparian conservation area desired conditions.	Standard (WTR-RCA-STD) 02 Limit pesticide applications to only those cases where pesticides are required for the control of the invasive species.	Standard (WTR-RCA-STD) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Standard (WTR-RCA-STD) 03 Prohibit storage of fuels and other toxic materials except at designated administrative sites and sites covered by special use authorization. Prohibit refueling within riparian conservation areas except when there are no other reasonable alternatives.	Standard (WTR-RCA-STD) 03 Prohibit storage of fuels and other toxic materials; no exceptions for designated administrative sites and sites covered by special use authorization. Prohibit refueling within riparian conservation areas except when there are no other alternatives.	Standard (WTR-RCA-STD) 03 Prohibit storage of fuels and other toxic materials except at designated administrative sites and sites covered by special use authorization.
Standard (WTR-RCA-STD) 04 Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species, except where desired to protect native species.	Standard (WTR-RCA-STD) 04 Same as Alternative B.	Standard (WTR-RCA-STD) 04 Allow temporary barriers on stream crossings during project implementation.
Standard (WTR-RCA-STD) 05 All new or replaced permanent stream crossings shall accommodate at least the 100-year flood, its bedload, and debris. Estimates for 100-year flood potential will reflect the best available science regarding potential effects of climate change, and species needs.	Standards (WTR-RCA-STD) 05 Same as Alternative B.	Standards (WTR-RCA-STD) 05 Same as Alternative B.
Standard (WTR-RCA-STD) 06 Locate water drafting sites to minimize adverse effects to instream flows and depletion of pool habitat.	Standard (WTR-RCA-STD) 06 Same as Alternative B.	Standards (WTR-RCA-STD) 06 Same as Alternative B.
Standard (WTR-RCA-STD) 07 Prevent disturbance to streambanks and shorelines of lakes and ponds caused by resource activities (such as livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of the stream reach, or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard may not be met within Destination Recreation Management Areas, and sites authorized under special use permits, but activities will be designed and managed to reduce the percent of impact to the extent feasible.	Standard (WTR-RCA-STD) 07 Disturbance to streambanks and shorelines of lakes and ponds (caused by resource management activities, or factors such as off-highway vehicles or dispersed recreation) will not exceed 20 percent of stream reach, or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. Within Destination Recreation Areas, and sites authorized under special use permits design and manage access to reduce impacts to water quality, streambanks, and shorelines.	Standards (WTR-RCA-STD) 07 Same as Alternative B.
Standard (WTR-RCA-STD) 08 In fen ecosystems, limit disturbance from livestock and packstock to no more than 20 percent annually. Reduce disturbance further if a fen is nonfunctional or functional at risk with a downward trend.	Standards (WTR-RCA-STD) 08 In fen ecosystems, limit disturbance from livestock and packstock to no more than 15 percent annually. Temporarily remove livestock or packstock from area if a fen is nonfunctional or functional at risk.	Standard (WTR-RCA-STD) 08 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Standard (WTR-RCA-STD) 09 Use screening devices for water drafting pumps. (Fire suppression activities are exempt during initial attack.) Use pumps with low entry velocity to minimize removal of aquatic species from aquatic habitats, including juvenile fish, amphibian egg masses, and tadpoles.	Standard (WTR-RCA-STD) 09 Same as Alternative B.	Standard (WTR-RCA-STD) 09 Same as Alternative B.
Standard (WTR-RCA-STD) 10 Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems.	Standard (WTR-RCA-STD) 10 Prohibit ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems.	Standard (WTR-RCA-STD) 10 Mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems.
Standard (WTR-RCA-STD) 11 Prevent activities from causing significant degradation of fens from trampling, such as by livestock, packstock, wheeled vehicles, and people.	Standards (WTR-RCA-STD) 11 Same as Alternative B.	Standards (WTR-RCA-STD) 11 Same as Alternative B.
Standard (WTR-RCA-STD) 12 Assess the hydrologic function of riparian areas, meadows, fens, and other special aquatic features during rangeland management analysis. Ensure that characteristics of special features are, at a minimum, at proper functioning condition or functioning at risk and trending toward proper functioning condition, as defined in appropriate technical report. ² If systems are functioning at risk, assess appropriate actions to move towards proper functioning condition.	Standard (WTR-RCA-STD) 12 Assess the hydrologic function of riparian areas, meadows, fens, and other special aquatic features during rangeland management analysis. Ensure that characteristics of special features are, at a minimum, at proper functioning condition, as defined in appropriate technical reports. ² If systems are functioning at risk, assess appropriate actions to move towards proper functioning condition.	Standard (WTR-RCA-STD) 12 Same as Alternative B.
Standard (WTR-RCA-STD) 13 Complete initial inventories of fens within active grazing allotments prior to completing the allotment environmental analysis. If there are more than 10 fens in an allotment, complete initial inventories of at least 25 percent of all the fens in the allotment, and establish a 5-year schedule to complete inventory of the remaining fens in the allotment.	Standard (WTR-RCA-STD) 13 Same as Alternative B.	Standard (WTR-RCA-STD) 13 Same as Alternative B.

² R5 Rangeland Analysis Guide R5-EM-TP-004. USDI Bureau of Land Management. 2003. Riparian Area Management: A User Guide to Assessing Proper Functioning Condition and Supporting Science for Lentic Areas, Technical Reference 1737-16. National Applied Resource Sciences Center, Denver, CO. 109 pp.

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Alternative B	Alternative C and E	Alternative D
Standard (WTR-RCA-STD) 14 Limit construction of new skid trails or temporary roads for access into riparian conservation areas unless it is the only feasible option to conduct restoration activities for improvement of riparian conservation areas. When conducting restoration activities for protection or improvement of riparian conservation areas, best management practices for erosion must be followed to prevent soil loss.	Standard (WTR-RCA-STD) 14 Prohibit construction of new skid trails or temporary roads for access into riparian conservation areas, unless it is the only feasible option to conduct restoration activities for protection and improvement of riparian conservation areas. Close and restore these areas as part of the project.	Standard (WTR-RCA-STD) 14 Limit construction of new skid trails or temporary roads for access into riparian conservation areas, unless it is the only feasible option to conduct activities. When conducting activities within riparian conservation areas, best management practices for erosion must be followed.
Standard (WTR-RCA-STD) 15 Designate equipment exclusion zones within riparian conservation areas when designing projects. The exclusion zone width is within 150 feet of perennial streams, meadows springs, and seeps; and 75 feet for intermittent streams. These widths will increase as slope increases, or if soils are unstable. Adjustments will be made only after consultation with experts in soils, hydrology, fisheries, and/or aquatic ecology. Any project, occurring within the exclusions zone will repair any damage, including stabilizing soils.	Standard (WTR-RCA-STD) 15 Designate equipment exclusion zones within riparian conservation areas when designing projects. The exclusion zone width is 150 feet for perennial streams, meadows springs, and seeps; and 100 feet for intermittent streams. These widths will increase as slope increases, or if soils are unstable. Any project, occurring within the exclusions zone will minimize and repair any damage, including stabilizing soils.	No similar standard, see Guideline (WTR-RCA-GDL) 12
WATERSHEDS – Riparian Conservation Areas – Guidelines		
Guideline (WTR-RCA-GDL) 01 See also MA-CWPZ-STD 01. Hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features should be maintained and restored. Roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths should have corrective actions implemented where possible to restore connectivity.	Guideline (WTR-RCA-GDL) 01 Hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features should be maintained and restored. Roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths should have corrective actions implemented where necessary to restore connectivity.	Guideline (WTR-RCA-GDL) 01 Same as Alternative B.
Guideline (WTR-RCA-GDL) 02 Water quality or habitat for aquatic and riparian-dependent species should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species should have corrective actions implemented where possible.	Guideline (WTR-RCA-GDL) 02 Water quality or habitat for aquatic and riparian-dependent species should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species should have corrective actions implemented where necessary.	Guideline (WTR-RCA-GDL) 02 Water quality or habitat for aquatic and riparian-dependent species should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species should have their impacts reduced.

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Alternative B	Alternative C and E	Alternative D
Guidelines (WTR-RCA-GDL) 03 When vegetation is treated in near-river or stream areas, coarse wood should be considered as an addition to the streams to enhance habitat, where possible.	Guideline (WTR-RCA-GDL) 03 Same as Alternative B.	Guideline (WTR-RCA-GDL) 03 Same as Alternative B.
Guidelines (WTR-RCA-GDL) 04 To limit soil disturbance in riparian conservation areas, activities should use methods that limit soil disturbance to less than 20 percent (such as low ground pressure equipment, helicopters, over-snow logging, extra ground cover requirements, or other non-ground disturbing actions) to achieve desired conditions consistent with best management practices and plan direction.	Guideline (WTR-RCA-GDL) 04 Same as Alternative B.	Guideline (WTR-RCA-GDL) 04 Same as Alternative B.
Guideline (WTR-RCA-GDL) 05 Post-wildfire management activities should emphasize and enhance native vegetation cover, stabilize channels, reduce erosion, and minimize adverse effects from the existing road network to protect the riparian systems.	Guideline (WTR-RCA-GDL) 05 Same as Alternative B.	Guideline (WTR-RCA-GDL) 05 Same as Alternative B.
Guideline (WTR-RCA-GDL) 06 To improve water quality or habitat for aquatic and riparian-dependent species, evaluate the impacts of facilities on riparian conservation areas when reissuing permits for livestock. If impacts are found, existing livestock facilities should be located outside of meadows and riparian areas.	Guideline (WTR-RCA-STD) 06 To improve water quality or habitat for aquatic and riparian-dependent species, during permit renewal, existing livestock facilities should be located outside of fens, meadows, and riparian areas.	Guideline (WTR-RCA-STD) 06 Same as Alternative B.
Guideline (WTR-RCA-GDL) 07 Wildfire control methods and activities that would impact the riparian conservation area (in particular dozer-built lines) should not be used unless alternative control methods are not safe or practical. If dozers are used, the lines should be repaired during suppression repair.	Guideline (WTR-RCA-STD) 07 Same as Alternative B.	Guideline (WTR-RCA-STD) 07 Same as Alternative B.
Guideline SQF (WTR-RCA-GDL) 08 Stream reaches of all State-designated wild and heritage trout waters (designated as of October 2017) should be managed according to the following: Any activity that results in trampling and chiseling should not exceed 10 percent of any given stream reach to reduce sedimentation into wild trout or heritage waters.	Guideline SQF (WTR-RCA-STD) 08 Same as Alternative B.	Guideline SQF (WTR-RCA-STD) 08 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
<p>Guideline SNF (WTR-RCA-GDL) 08 Stream reaches of all State-designated wild trout waters (designated as of October 2017) should be managed according to the following: Any activity that results in trampling and chiseling should not exceed 20 percent of any given stream reach to reduce sedimentation into wild trout waters. A reach is defined as a continuous portion of a stream with homogeneous physical characteristics.</p>	<p>Guideline SNF (WTR-RCA-GDL) 08 Stream reaches of all State-designated wild trout waters (designated as of October 2017) should be managed according to the following: Any activity that results in trampling and chiseling should not exceed 15 percent of any given stream reach in order to reduce sedimentation into wild trout waters. A reach is defined as a continuous portion of a stream with homogeneous physical characteristics.</p>	<p>Guideline SNF (WTR-RCA-STD) 08 Same as Alternative B.</p>
<p>Guideline (WTR-RCA-GDL) 09 Mechanical exclusion zones of 25 feet on either side of an ephemeral stream with structure should be designated to protect soils and streams from sedimentation soils and subsequent erosion. The necessity of increasing buffers on these headwater streams with structure should be analyzed by specialists in soils, hydrology, aquatics, and/or fisheries where slope, aspect, recent fires, soil conditions, or species occupancy raise concerns.</p>	<p>Guideline (WTR-RCA-GDL) 09 Mechanical exclusion zones of 50 feet on either side of an ephemeral stream with structure should be designated to protect soils and streams from sedimentation soils and subsequent erosion. The boundaries may be increased by specialists in soils, hydrology, fisheries, and/or aquatic ecology due to slope, aspect, recent fires, soil conditions, or species occupancy.</p>	<p>Guideline (WTR-RCA-GDL) 09 Where at-risk species are present in ephemeral streams, the habitat should be protected by a 25-foot buffer around the habitat.</p>
<p>Guideline (WTR-RCA-GDL) 10 To protect water quality and species habitats; unstable streambanks should be restored to attain a streambank system that is no more than 10 percent unstable of the reach's current potential.</p>	<p>Guideline (WTR-RCA-GDL) 10 Same as Alternative B.</p>	<p>Guideline (WTR-RCA-GDL) 10 Same as Alternative B.</p>
<p>Guideline (WTR-RCA-GDL) 11 To protect water quality and spawning habitat, stream-modifying construction activities within or immediately adjacent to the aquatic zone should be limited to when stream flows are the lowest.</p>	<p>Guideline (WTR-RCA-GDL) 11 To prevent impacts to spawning habitat, stream-modifying construction activities within or immediately adjacent to the aquatic zone should be prohibited during the period February 15 to August 20 in streams with spring spawning species (rainbow, cutthroat, and golden trout). Where a clear need is shown, anti-spawning mats can be placed in the proposed area for stream disturbance the fall season before the activity starts.</p>	<p>Guideline (WTR-RCA-GDL) 11 To prevent impacts to water quality, stream-modifying construction activities within or immediately adjacent to the aquatic zone should be limited to when stream flows are the lowest.</p>

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Alternative B	Alternative C and E	Alternative D
No similar guideline, see Standard (WTR-RCA-STD) 15	No similar guideline, see Standard (WTR-RCA-STD) 15	Guideline (WTR-RCA-GDL) 12 Designate equipment exclusion zones within riparian conservation areas when designing projects. The exclusion zone width is 100 feet for perennial streams, meadows, seeps, and other aquatic habitat, and 75 feet for intermittent streams. When mechanical incursion is required in the riparian conservation area outside of the exclusion zone, use methods that will limit soil disturbance within the riparian conservation area, such as low ground pressure equipment, helicopters, over- snow logging, extra ground cover requirements, or other soil protective actions to achieve desired conditions consistent with best management practices and other plan direction.
WATERSHEDS – Riparian Conservation Areas – Suitability		
Suitability (WTR-RCA-SUIT) 01 Riparian conservation areas are not suitable for timber production (perennial, intermittent, and ephemeral streams and special aquatic features). Timber harvest is allowed for other multiple use purposes including safety, and restoration towards desired conditions.	Suitability (WTR-RCA-SUIT) 01 Same as Alternative B.	Suitability (WTR-RCA-SUIT) 01 Riparian conservation areas are not suitable for timber production, except for ephemeral streams. Timber harvest is allowed for other multiple use purposes including safety, and restoration towards desired conditions
RIPARIAN CONSERVATION AREA – Meadows – Desired Conditions		
Desired Condition (WTR-RCA-MEAD-DC) 01 Meadows are hydrologically functional. Sites of accelerated erosion, such as gullies and head cuts are stabilized, recovering, or within the natural range of variation. Vegetation roots occur throughout the available soil profile. Meadows with perennial and intermittent streams have the following characteristics: (1) stream energy from high flows is dissipated, reducing erosion and improving water quality; (2) streams filter sediment and capture bedload, aiding floodplain development; (3) meadow conditions enhance floodwater retention and groundwater recharge; and (4) root masses stabilize streambanks against cutting action.	Desired Condition (WTR-RCA-MEAD-DC) 01 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (WTR-RCA-MEAD-DC) 02 Wetlands and groundwater-dependent ecosystems (including springs, seeps, fens, wet meadows, and associated wetlands or riparian systems) support stable herbaceous and woody vegetation communities that are resilient to drought, climate change, and other stressors. Root masses stabilize stream channels, shorelines, and soil surfaces. The natural hydrologic, hydraulic, and geomorphic processes in these ecosystems sustain their unique functions and biological diversity.	Desired Condition (WTR-RCA-MEAD-DC) 02 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 02 Same as Alternative B.
Desired Condition (WTR-RCA-MEAD-DC) 03 Meadows are resilient and recover rapidly from natural and human disturbances. They exhibit a high degree of hydrologic connectivity laterally across the floodplain and vertically between surface and subsurface flows. They provide important ecosystem services such as high-quality water, recharge of streams and aquifers, and moderation of climate variability and change.	Desired Condition (WTR-RCA-MEAD-DC) 03 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 03 Same as Alternative B.
Desired Condition (WTR-RCA-MEAD-DC) 04 Soils in wet and headwater meadows are influenced by a shallow water table and function to filter water. These soils also store and release water over an extended period of time, which helps to maintain streamflow during dry summer months.	Desired Condition (WTR-RCA-MEAD-DC) 04 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 04 Same as Alternative B.
Desired Condition (WTR-RCA-MEAD-DC) 05 Meadows have substantive ground cover and a rich and diverse species composition, especially of grasses and forbs. Meadows have high plant functional diversity with multiple successional functional types represented. Perennial streams in meadows contain a diversity of age classes of shrubs along the streambank, where the potential exists for these plants.	Desired Condition (WTR-RCA-MEAD-DC) 05 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 05 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (WTR-RCA-MEAD-DC) 06 A complexity of meadow habitat types and successional patterns support native plant and animal communities. Meadow species composition is predominantly native, where graminoid (grass-like) species are well represented and vigorous, and regeneration occurs naturally. Healthy stands of willow, alder, and aspen are present within and adjacent to meadows with suitable physical conditions for these species. Natural disturbances and management activities are sufficient to maintain desired vegetation structure, species diversity, and nutrient cycling.	Desired Condition (WTR-RCA-MEAD-DC) 06 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 06 Same as Alternative B.
Desired Condition (WTR-RCA-MEAD-DC) 07 Meadows in montane and upper montane areas have low- to moderate-severity fire restored as an ecological process, especially on meadow edges, limiting conifer encroachment, and enhancing native understory plant composition and cover.	Desired Condition (WTR-RCA-MEAD-DC) 07 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 07 Same as Alternative B.
Desired Condition (WTR-RCA-MEAD-DC) 08 Fen condition is within the natural range of variation. Fens are resilient with continual peat accumulation and carbon sequestration. The hydrologic regime, and vegetation, soil, and water characteristics sustain the fen's ability to support unique physical and biological attributes.	Desired Condition (WTR-RCA-MEAD-DC) 08 Same as Alternative B.	Desired Condition (WTR-RCA-MEAD-DC) 08 Same as Alternative B.
RIPARIAN CONSERVATION AREA – Meadows – Objectives		
Objective (WTR-RCA-MEAD-OBJ) 01 Enhance or improve conditions on at least five meadows of any size, within 15 years following plan approval.	Objective (WTR-RCA-MEAD-OBJ) 01 Enhance or improve conditions on at least 15 meadows of any size, within 15 years following plan approval.	Objective (WTR-RCA-MEAD-OBJ) 01 Same as Alternative B.
RIPARIAN CONSERVATION AREA – Rivers and Streams – Desired Conditions		
Desired Condition (WTR-RCA-RIV-DC) 01 Stream ecosystems, riparian corridors, and associated stream courses sustain ecosystem structure; are resilient to natural disturbances (such as flooding) and climate change; promote the natural movement of water, sediment and woody debris; and provide habitat for native aquatic species or desirable nonnative species.	Desired Condition (WTR-RCA-RIV-DC) 01 Same as Alternative B.	Desired Condition (WTR-RCA-RIV-DC) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (WTR-RCA-RIV-DC) 02 Stream ecosystems, including ephemeral watercourses, exhibit full connectivity where feasible to maintain aquatic species diversity, except where barriers are maintained in good condition to protect native aquatic species. Ephemeral watercourses provide for dispersal, access to new habitats, perpetuation of genetic diversity, and nesting and foraging habitat for riparian and aquatic species.	Desired Condition (WTR-RCA-RIV-DC) 02 Same as Alternative B.	Desired Condition (WTR-RCA-RIV-DC) 02 Same as Alternative B.
Desired Condition (WTR-RCA-RIV-DC) 03 Instream flows are sufficient to sustain desired conditions of riparian, aquatic, wetland, and meadow habitats and retain patterns of sediment, nutrients, and wood routing as close as possible to those with which aquatic and riparian biota evolved. The physical structure and condition of streambanks and shorelines minimize erosion and sustain desired habitat diversity.	Desired Condition (WTR-RCA-RIV-DC) 03 Same as Alternative B.	Desired Condition (WTR-RCA-RIV-DC) 03 Same as Alternative B.
Desired Condition (WTR-RCA-RIV-DC) 04 Streams and rivers maintain seasonal water flow over time, including periodic flooding, which promotes natural movement of water, sediment, nutrients, and woody debris. Flooding creates a mix of stream substrates for fish habitat, including clean gravels for fish spawning, large wood structures, and sites for riparian vegetation to germinate and establish.	Desired Condition (WTR-RCA-RIV-DC) 04 Same as Alternative B.	Desired Condition (WTR-RCA-RIV-DC) 04 Same as Alternative B.
Desired Condition (WTR-RCA-RIV-DC) 05 Stream channel conditions exhibit a sediment regime under which aquatic and riparian ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport. The sediment regime should be similar to the natural distribution of reference conditions.	Desired Condition (WTR-RCA-RIV-DC) 05 Same as Alternative B.	Desired Condition (WTR-RCA-RIV-DC) 05 Same as Alternative B.
Desired Condition (WTR-RCA-RIV-DC) 06 Within rivers and streams, the level of coarse large woody debris is within the natural range of variation.	Desired Condition (WTR-RCA-RIV-DC) 06 Same as Alternative B.	Desired Condition (WTR-RCA-RIV-DC) 06 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
RIPARIAN CONSERVATION AREA – Rivers and Streams – Objectives		
Objective SQF (WTR-RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 5 stream miles over a 15-year period.	Objective SQF (WTR-RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 20 stream miles over a 15-year period.	Objective SQF (WTR-RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 5 stream miles over a 15-year period.
Objective SNF (WTR-RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 5 stream miles over a 15-year period	Objective SNF (WTR-RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 10 stream miles over a 15 year period	Objective SNF (WTR-RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 5 stream miles over a 15-year period
Objective (WTR-RCA-RIV-OBJ) 02 Eliminate or mitigate at least one priority barrier to aquatic organism passage or ecological connectivity within 15 years following plan approval.	Objective (WTR-RCA-RIV-OBJ) 02 Same as Alternative B.	Objective (WTR-RCA-RIV-OBJ) 02 Same as Alternative B.
RIPARIAN CONSERVATION AREA – Lakes, Pools, Ponds – Desired Conditions		
Desired Condition (WTR-RCA-LPP-DC) 01 Lakes and ponds retain necessary attributes, such as adequate vegetation and large woody debris to function properly and support native biotic communities. Attributes include floodwater retention and groundwater recharge, stabilized islands and shoreline features, and diverse characteristics to provide for amphibian production, waterfowl breeding, and biodiversity.	Desired Condition (WTR-RCA-LPP-DC) 01 Same as Alternative B.	Desired Condition (WTR-RCA-LPP-DC) 01 Same as Alternative B.
RIPARIAN CONSERVATION AREA – Springs and Seeps – Desired Conditions		
Desired Condition (WTR-RCA-SPR-DC) 01 Springs provide sufficient water to maintain healthy habitats for native riparian and aquatic species.	Desired Condition (WTR-RCA-SPR-DC) 01 Same as Alternative B.	Desired Condition (WTR-RCA-SPR-DC) 01 Same as Alternative B.
Desired Condition (WTR-RCA-SPR-DC) 02 Springs are resilient to natural disturbances, groundwater diversions, and changing climate conditions. Springs function across the landscape within their type and water availability.	Desired Condition (WTR-RCA-SPR-DC) 02 Same as Alternative B.	Desired Condition (WTR-RCA-SPR-DC) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (WTR-RCA-SPR-DC) 03 Springs and associated streams and wetlands have the necessary soil, water, and vegetation attributes to be healthy and functioning at or near potential. Water flow is similar to historic levels and persists over time, within constraints of climate change.	Desired Condition (WTR-RCA-SPR-DC) 03 Same as Alternative B.	Desired Condition (WTR-RCA-SPR-DC) 03 Same as Alternative B.

Table A-9. Management Area- Conservation Watersheds

Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – Conservation Watersheds – Desired Conditions		
Desired Condition (MA-CW-DC) 01 Conservation watersheds provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of species of conservation concern and the recovery of threatened, endangered, proposed, or candidate species.	Desired Condition (MA-CW) 01 Same as Alternative B.	N/A
Desired Condition (MA-CW-DC) 02 Conservation watersheds exhibit long-term (multiple planning cycles), high, watershed integrity and aquatic, riparian, and terrestrial ecosystems are resilient to stochastic disturbance events such as wildfires, floods, and landslides.	Desired Condition (MA-CW-DC) 02 Same as Alternative B.	N/A
Desired Condition (MA-CW-DC) 03 The drainage connections between floodplains, wetlands, upland slopes, headwaters, and tributaries are intact and provide for breeding, dispersal, overwintering, and feeding habitats for at-risk species. These areas provide refugia if other areas of the watershed are disturbed by events such as floods, landslides, and fires.	Desired Condition (MA-CW-DC) 03 Same as Alternative B.	N/A
Desired Condition (MA-CW-DC) 04 The ecological integrity of upland vegetation is resilient and maintains soil productivity, water quality, and creates conditions to maintain or improve watershed conditions under the Watershed Condition Framework.	Desired Condition (MA-CW-DC) 04 Same as Alternative B.	N/A

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Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – Conservation Watersheds – Objectives		
Objective (MA-CW-OBJ) 01 Within 15 years of plan approval, maintain, improve or restore conditions on at least 3 sub-watersheds within Conservation Watersheds, based on the Watershed Condition Inventory.	Objective (MA-CW-OBJ) 01 Same as Alternative B.	N/A
MANAGEMENT AREA – Conservation Watersheds – Standards		
Standard (MA-CW-STD)-01 For each existing designated road or planned temporary road, minimize road and landing locations in riparian conservation areas. Do not enter or put fill in wetlands or streams when constructing new or reopening temporary roads. Use alternative methods if necessary to use these routes. Close and restore user-created routes and decommission low priority roads whenever possible during projects. Improve high-use designated roads and trails to minimize disruption of natural hydrologic flow whenever possible and restrict sidecasting as necessary to prevent the introduction of sediment to streams.	Standard (MA-CW-STD)-01 For each existing designated road or planned temporary road, minimize road and landing locations in riparian conservation areas. Do not enter or put fill in entire wetlands or streams when constructing new or reopening temporary roads. Use alternative methods rather than culverts, fill, or blocking overland flows. Close and restore user-created routes and decommission low priority roads whenever possible during projects. Improve high use designated roads and trails to minimize disruption of natural hydrologic flow whenever possible and prohibit sidecasting to prevent the introduction of sediment to streams.	N/A
Standard (MA-CW-STD)-02 Locate new or relocate existing recreational facilities including trails and dispersed sites away from streams and meadows whenever possible. For existing recreation facilities within riparian conservation areas, evaluate and mitigate impacts, to the extent practicable, to ensure that these do not contribute to degradation of aquatic habitat.	Standard (MA-CW-STD)-02 Locate new or relocate existing recreational facilities including trails and dispersed sites away from streams and meadows whenever possible. For existing recreation facilities within riparian conservation areas, evaluate and mitigate impacts to ensure that these do not contribute to degradation of aquatic habitat.	N/A

Table A-10. Management Area MA – Critical Aquatic Refuges

Revisions to Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – Critical Aquatic Refuges – <i>Desired Conditions</i>		
N/A	Desired Condition (MA-CAR-DC) 01 Critical aquatic refuges provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of species of conservation concern and the recovery of threatened, endangered, proposed, or candidate species; and maintain other riparian and aquatic species.	N/A
N/A	Desired Condition (MA-CAR-DC) 02 The ecological integrity of upland vegetation is resilient and maintains soil productivity, water quality, and creates conditions to maintain or improve watershed conditions.	N/A

Table A-11. Animal and Plant Species

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Forestwide – <i>Desired Conditions</i>		
Desired Condition (SPEC-FW-DC) 01 Persistent populations of native, and desirable nonnative, plant and animal species are supported by healthy ecosystems, essential ecological processes, and land stewardship activities, and reflect the diversity, quantity, quality, and capability of natural habitats on the National Forest. These ecosystems are also resilient to uncharacteristic fire, climate change, and other stressors, and this resilience supports the long-term sustainability of plant and animal communities.	Desired Condition (SPEC-FW-DC) 01 Same as Alternative B.	Desired Condition (SPEC-FW-DC) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Condition (SPEC-FW-DC) 02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impacts from threats (such as disease and other site-specific threats). Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for species of conservation concern.	Desired Condition (SPEC-FW-DC) 02 Same as Alternative B.	Desired Condition (SPEC-FW-DC) 02 Same as Alternative B.
Desired Condition (SPEC-FW-DC) 03 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements of special habitats (like carbonate rock outcrops) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions.	Desired Condition (SPEC-FW-DC) 03 Same as Alternative B.	Desired Condition (SPEC-FW-DC) 03 Same as Alternative B.
Desired Condition (SPEC-FW-DC) 04 The national forest provides high quality hunting and fishing opportunities. Habitat for nonnative fish and game species is managed in locations and ways that do not pose substantial risk to native species, while still contributing to economies of local communities.	Desired Condition (SPEC-FW-DC) 04 Same as Alternative B.	Desired Condition (SPEC-FW-DC) 04 Same as Alternative B.
Desired Condition (SPEC-FW-DC) 05 Residents and visitors have ample opportunities to experience, appreciate, and learn about the national forest's wildlife, fish, and plant resources.	Desired Condition (SPEC-FW-DC) 05 Same as Alternative B.	Desired Condition (SPEC-FW-DC) 05 Same as Alternative B.
SPECIES DIRECTION – Forestwide – Goals		
Goal (SPEC-FW-GOAL) 01 Communicate, collaborate, and cooperate with other agencies, Tribes, partners and private landowners to encourage resource protection and restoration of ecological conditions that benefit wildlife, fish, and plants across ownership boundaries.	Goal (SPEC-FW-GOAL) 01 Same as Alternative B.	Goal (SPEC-FW-GOAL) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Goal (SPEC-FW-GOAL) 02 Collaborate with the California Department of Fish and Wildlife to consider potential disturbance factors to deer and to consider habitat management opportunities.	Goal (SPEC-FW-GOAL) 02 Same as Alternative B.	Goal (SPEC-FW-GOAL) 02 Same as Alternative B.
Goal (SPEC-FW-GOAL) 03 Work with the California Department of Fish and Wildlife (following the memoranda of understanding) and U.S. Fish and Wildlife Service to restore and maintain essential habitat for at-risk species and implement other recovery actions according to species recovery plans.	Goal (SPEC-FW-GOAL) 03 Same as Alternative B.	Goal (SPEC-FW-GOAL) 03 Same as Alternative B.
Goal (SPEC-FW-GOAL) 04 Participate in development of the regional whitebark pine conservation and restoration strategy in collaboration with other Federal agencies, research organizations, and other partners.	Goal (SPEC-FW-GOAL) 04 Same as Alternative B.	Goal (SPEC-FW-GOAL) 04 Same as Alternative B.
Goal (SPEC-FW-GOAL) 05 Coordinate with State and Federal agencies and other partners to provide education materials and best management practices information for the public and permittees to limit the potential spread of disease to caves and mines used by bats.	Goal (SPEC-FW-GOAL) 05 Same as Alternative B.	Goal (SPEC-FW-GOAL) 05 Same as Alternative B.
Goal (SPEC-FW-GOAL) 06 Coordinate with local, State, and Federal law enforcement and other agencies to remove and remediate poisonous substances and pesticides associated with marijuana cultivation in the wildland.	Goal (SPEC-FW-GOAL) 06 Same as Alternative B.	Goal (SPEC-FW-GOAL) 06 Same as Alternative B.
Goal (SPEC-FW-GOAL) 07 Coordinate with adjacent landowners to modify open pipes and other potential wildlife traps to reduce wildlife mortality.	Goal (SPEC-FW-GOAL) 07 Same as Alternative B.	Goal (SPEC-FW-GOAL) 07 Same as Alternative B.
SPECIES DIRECTION – Forestwide – Standards		
Standard (SPEC-FW-STD) 01 Where pesticide applications are proposed within 500 feet of known occupied sites for Yosemite toad, Sierra Nevada yellow-legged frog, Mountain yellow-legged frog, and for other aquatic and riparian at-risk species, design applications to avoid adverse effects to individuals and their habitats.	Standard (SPEC-FW-STD) 01 Same as Alternative B.	Standard (SPEC-FW-STD) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Forestwide –Guidelines		
Guideline (SPEC-FW-GDL) 01 Design features, mitigation, and project timing considerations should be incorporated into projects that may affect habitat for at-risk species where they occur to minimize impacts to ecological conditions that provide for the persistence of at-risk species.	Guideline (SPEC-FW-GDL) 01 Same as Alt B	Guideline (SPEC-FW-GDL) 01 Design features, mitigation, and project timing considerations should be incorporated into projects that may affect habitat for at-risk species where they occur outside of the community wildfire protection zones or focus landscapes to minimize impacts to ecological conditions that provide for the persistence of at-risk species.
Guideline (SPEC-FW-GDL) 02 Known nest, roost, or den trees used by species of conservation concern, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the reasonably unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements.	Guideline (SPEC-FW-GDL) 02 Known nest, roost, or den trees used by species of conservation concern, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the reasonably unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements. Closing areas should be considered if feasible.	Guideline (SPEC-FW-GDL) 02 Same as Alternative B.
Guideline (SPEC-FW-GDL) 03 To minimize disturbance to deer breeding and fawning, vegetation treatments should include minimization actions developed in coordination with the California Department of Fish and Wildlife in key summer range areas from May 15 through July 15, and during rutting season in key winter range areas from November 15 through January 1 (refer to most current California Department of Fish and Wildlife deer range maps).	Guideline (SPEC-FW-GDL) 03 To minimize disturbance to deer breeding and fawning, mechanical vegetation treatments should include minimization actions developed in coordination with the California Department of Fish and Wildlife in key summer range areas from May 15 through July 15, and during rutting season in key winter range areas from November 15 through January 1 (refer to most current California Department of Fish and Wildlife deer range maps).	No similar Guideline
Guideline (SPEC-FW-GDL) 04 Habitat management objectives and nonhabitat recovery actions from approved recovery plans should be incorporated, if appropriate, in the design of projects that will occur within federally listed species habitat to contribute to recovery of the species.	Guideline (SPEC-FW-GDL) 04. Same as Alternative B	Guideline (SPEC-FW-GDL) 04 Same as Alternative B
Guideline (SPEC-FW-GDL) 05 Habitat management objectives or goals from approved conservation strategies or agreements should be incorporated, if appropriate, in the design of projects that will occur within at-risk species habitat.	Guideline (SPEC-FW-GDL) 05 Same as Alternative B	Guideline (SPEC-FW-GDL) 05 Same as Alternative B

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Guideline (SPEC-FW-GDL) 06 Water developments (such as a diversion or well) should be avoided near streams, seeps, and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur.	Guideline (SPEC-FW-GDL) 06 Same as Alternative B.	Guideline (SPEC-FW-GDL) 06 Same as Alternative B.

Table A-12. Fisher

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Fisher – <i>Desired Conditions</i>		
Desired Condition (SPEC-FSHR-DC) 01 Outside of community buffers (see community wildfire protection zone guidelines FIRE-CWPZ-GDL), essential fisher habitat elements, including high value reproductive habitat, are common and well distributed throughout the fisher's range. Elements include large living and dead trees, especially pines and oaks where feasible, and structures used by fishers for resting and denning such as cavities and deformities.	Desired Condition (SPEC-FSHR-DC) 01 Same as Alternative B.	Desired Condition (SPEC-FSHR-DC) 01 Same as Alternative B.
Desired Condition (SPEC-FSHR-DC) 02 Black oaks are well distributed within mixed-conifer and conifer-hardwood stands throughout the fisher's range. The majority of trees are in good condition and the number of large oaks is increasing.	Desired Condition (SPEC-FSHR-DC) 02 Same as Alternative B.	Desired Condition (SPEC-FSHR-DC) 02 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
No similar desired condition.	Desired Condition (SPEC-FSHR-DC) 03 Within the Southern Sierra Fisher Strategy Area, at least 60 percent of each fisher hexagon, on average, is in CWHR classes 5M, 4D, 5D, and 6 in a heterogeneous pattern. This proportion may vary according to the landscape conditions within each hexagon. Canopy cover greater than 60 percent occurs in patches, especially in more mesic sites like canyons and swales and on north and east slopes. The patches may be separated by more open stands, especially on drier slopes and ridges, with up to 25 percent of the hexagon in open canopy cover (less than 40 percent) and the balance in moderate canopy cover (40 to 60 percent). Dense stands are also punctuated at fine resolution with gaps of 0.03 to 2.0 acres (median of 0.1 acre).	No similar desired condition.
Desired Condition (SPEC-FSHR-DC) 03 Fisher linkage areas provide connectivity between fisher habitat core areas. Fisher linkage areas support patchy vegetation with some moderate to dense tree canopy cover where site conditions allow, such as along riparian corridors, or shrub cover where forest cover is inadequate.	Desired Condition (SPEC-FSHR-DC) 04 Same as Alternative B.	Desired Condition (SPEC-FSHR-DC) 03 Same as Alternative B.
Desired Condition (SPEC-FSHR-DC) 04 Fisher linkage areas have minimal impediments or barriers to fisher movement, allowing fishers to disperse and maintain genetic diversity within and among subpopulations.	Desired Condition (SPEC-FSHR-DC) 05 Same as Alternative B.	Desired Condition (SPEC-FSHR-DC) 04 Same as Alternative B.
Desired Condition (SPEC-FSHR-DC) 05 Predation on fishers occurs at natural rates with natural seasonal patterns and does not prevent fisher population growth.	Desired Condition (SPEC-FSHR-DC) 06 Same as Alternative B.	Desired Condition (SPEC-FSHR-DC) 05 Same as Alternative B.
SPECIES DIRECTION – Fisher – Goals		
Goal (SPEC-FSHR-GOAL) 01 Coordinate with the county roads departments, California Department of Transportation (CalTrans), and other agencies to evaluate opportunities to reduce the rate of fishers hit by vehicles.	Goal (SPEC-FSHR-GOAL) 01 Same as Alternative B.	Goal (SPEC-FSHR-GOAL) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Fisher – Standards		
No similar standard, see MA-WHMA-STD-01	Standard (SPEC-FSHR-STD) 01 Do not create openings (vegetative cover less than 30 percent) that would completely sever linkage areas where woody; strategically manage vegetation continuity in these areas as necessary to prevent widespread crown fire.	See Guideline (SPEC-FSHR-GDL) 07
SPECIES DIRECTION – Fisher – Guidelines		
No similar guideline, see MA-WHMA-GDL-01	N/A	<p>Guideline (SPEC-FSHR-GDL) 01 Vegetation and fuels reduction projects adjacent to mapped Fisher linkage areas should be managed to reduce the continuity of vegetation and risk of widespread crown fire, while not creating large areas of open canopy habitat (vegetative cover less than 30 percent) that would limit fisher use of the linkage area.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ • In focus landscapes, minimize creation of large areas of open canopy.
No similar guideline, see MA-WHMA-GDL-02	Guideline (SPEC-FSHR-GDL) 01 Prescribed fires should be designed to leave some unburned patches (up to 25 percent of total area within the burn perimeter) to provide heterogeneity and refugia for Fisher prey species, especially in larger burn units, if environmental conditions allow.	<p>Guideline (SPEC-FSHR-GDL) 02 Prescribed fires within the most current modeled fisher denning habitat should be designed to leave some unburned patches (up to 25 percent of total area within the burn perimeter) to provide heterogeneity and refugia for Fisher prey species, especially in larger burn units, if environmental conditions allow.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ • Does not apply to focus landscapes.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Guideline (SPEC-FSHR-GDL) 01 Do not create permanent new linear or otherwise continuous areas of open canopy habitat in or near current modeled fisher denning habitat or near high value reproductive habitat that would isolate the habitat or substantially increase predator access.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ where there is no overlap the WHMA 	<p>Guideline (SPEC-FSHR-GDL) 02 Do not create permanent new linear or otherwise continuous areas of open canopy habitat in or near current modeled fisher denning habitat or near high value reproductive habitat that would isolate the habitat or substantially increase predator access.</p>	<p>Guideline (SPEC-FSHR-GDL) 03 Do not create permanent new linear or otherwise continuous areas of open canopy habitat in or near high value reproductive habitat that would isolate the habitat or substantially increase predator access.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ.
<p>No similar guideline, see MA-WHMA-GDL-03</p>	<p>Guideline (SPEC-FSHR-GDL) 03 Limit large areas of high-intensity fire during firing operations within key fisher linkage areas.</p>	<p>Guideline (SPEC-FSHR-GDL) 04 Limit large areas of high-intensity fire during firing operations within key Fisher linkage areas.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ.

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Alternative B	Alternative C and E	Alternative D
<p>Guideline SNF (SPEC-FSHR-GDL) 02 Apply the limited operating periods below in occupied fisher habitat cores 4 and 5, to minimize disruptions to fisher reproduction. In fisher cores 4 and 5, the limited operating period applies to most current modeled fisher denning habitat buffered by 820 feet (250 meters).</p> <ol style="list-style-type: none"> Prohibit mechanical logging, thinning, mastication and construction activities from March 1 to June 30, or following current regional guidance. Prohibit using prescribed fire from March 1 to May 1, or following current regional guidance. <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> When a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area <p>Exceptions:</p> <ul style="list-style-type: none"> Does not apply in community buffers where there is no overlap with WHMA In community buffers where there is overlap with WHMA, apply only around areas known or likely to support denning, and prescribed fire is not prohibited. 	<p>Guideline SNF (SPEC-FSHR-GDL) 04 Apply the limited operating periods below in occupied fisher habitat cores 4 and 5, to minimize disruptions to fisher reproduction. In fisher cores 4 and 5, the limited operating period applies to most current modeled fisher denning habitat buffered by 820 feet (250 meters).</p> <ol style="list-style-type: none"> Prohibit mechanical logging, thinning, mastication and construction activities from March 1 to June 30, or following current regional guidance. Prohibit using prescribed fire from March 1 to May 1, or following current regional guidance. <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> When a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area; or When prescribed burning is the primary vegetation treatment. 	<p>Guideline SNF (SPEC-FSHR-GDL) 05 Apply the limited operating periods below in occupied fisher habitat cores 4 and 5, to minimize disruptions to fisher reproduction. In fisher cores 4 and 5, the limited operating period applies to most current modeled fisher denning habitat buffered by 820 feet (250 meters).</p> <ol style="list-style-type: none"> Prohibit mechanical logging, thinning, mastication and construction activities from March 1 to June 30, or following current regional guidance. Prohibit using prescribed fire from March 1 to May 1, or following current regional guidance. <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> When a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area <p>Exceptions:</p> <ul style="list-style-type: none"> Does not apply in community buffers In focus landscapes, apply the limited operating periods in occupied fisher habitat cores 4 and 5 around areas known or likely to support denning; the limited operating may be waived when a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Guideline SQF (SPEC-FSHR-GDL) 02 Apply the limited operating periods below in occupied fisher habitat cores 1 to 3, to minimize disruptions to fisher reproduction. In fisher core 1, the limited operating period applies to California wildlife habitat relationship fisher high-value reproductive habitat buffered by 820 feet (250 meters). In fisher cores 2 and 3, the limited operating period applies to most current modeled fisher denning habitat buffered by 820 feet (250 meters).</p> <ol style="list-style-type: none"> Prohibit mechanical logging, thinning, mastication and construction activities from March 1 to June 30, or following current regional guidance. Prohibit using prescribed fire from March 1 to May 1, or following current regional guidance. <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> When a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area <p>Exceptions:</p> <ul style="list-style-type: none"> Does not apply in community buffers where there is no overlap with WHMA In community buffers where there is overlap with WHMA, apply only around areas known or likely to support denning, and prescribed fire is not prohibited. 	<p>Guideline SQF (SPEC-FSHR-GDL) 04 Apply the limited operating periods below in occupied fisher habitat cores 1 to 3, to minimize disruptions to fisher reproduction. In fisher core 1, the limited operating period applies to California wildlife habitat relationship fisher high-value reproductive habitat buffered by 820 feet (250 meters). In fisher cores 2 and 3, the limited operating period applies to most current modeled fisher denning habitat buffered by 820 feet (250 meters).</p> <ol style="list-style-type: none"> Prohibit mechanical logging, thinning, mastication and construction activities from March 1 to June 30, or following current regional guidance. Prohibit using prescribed fire from March 1 to May 1, or following current regional guidance. <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> When a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area; or When prescribed burning is the primary vegetation treatment. 	<p>Guideline SQF (SPEC-FSHR-GDL) 05 Apply the limited operating periods below in occupied fisher habitat cores 1 to 3, to minimize disruptions to fisher reproduction. In fisher core 1, the limited operating period applies to California wildlife habitat relationship fisher high-value reproductive habitat buffered by 820 feet (250 meters). In fisher cores 2 and 3, the limited operating period applies to most current modeled fisher denning habitat buffered by 820 feet (250 meters).</p> <ol style="list-style-type: none"> Prohibit mechanical logging, thinning, mastication and construction activities from March 1 to June 30, or following current regional guidance. Prohibit using prescribed fire from March 1 to May 1, or following current regional guidance. <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> When a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area <p>Exceptions:</p> <ul style="list-style-type: none"> Does not apply in community buffers In focus landscapes, apply the limited operating periods in occupied fisher habitat cores 1 to 3 around areas known or likely to support denning; the limited operating may be waived when a project-specific evaluation determines a low risk to fishers or establishes absence of denning fishers in the project area.

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Alternative B	Alternative C and E	Alternative D
<p>Guideline (SPEC-FSHR-GDL) 03 Mechanical treatments may occur on up to 30% of each affected fisher hexagon within a 5-year period, provided resilience goals for remaining high value reproductive habitat are achievable.</p> <p>Where remaining high-value reproductive habitat is at significant risk of loss or isolation due to lack of resilience, conduct a cost-benefit assessment to determine if benefits to fisher habitat conservation in the long term are likely to outweigh short-term costs.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers 	<p>Guideline (SPEC-FSHR-GDL) 05 Mechanical treatments may occur on up to 13% of each affected fisher hexagon within a 5-year period.</p>	<p>Guideline (SPEC-FSHR-GDL) 06 Mechanical treatments may occur on up to 30% of each affected fisher hexagon within a 5-year period, provided resilience goals for remaining high value reproductive habitat are achievable.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • In focus landscapes, mechanical treatments may occur on up to 50% of each affected fisher hexagon within a 5-year period, provided resilience goals for remaining high value reproductive habitat are achievable.
No similar guideline.	<p>Guideline (SPEC-FSHR-GDL) 06 Mechanical treatments that occur within two or more fisher hexagons should not reduce connectivity of remaining high value reproductive habitat (CWHR 4D, 5M, 5D, and 6) within and between hexagons. When treating fisher hexagons within or adjacent to recently disturbed areas (e.g. severely burned or highly impacted by drought mortality), protect and promote connectivity within and between hexagons, and focus treatment on increasing resilience of remaining suitable habitat.</p>	No similar guideline.
See MA-WHMA-STD-01	See Standard (SPEC-FSHR-STD) 01	<p>Guideline (SPEC-FSHR-GDL) 07 To not completely sever mapped fisher linkage areas, fuelbreaks that cross mapped fisher linkage areas should be designed to provide hiding cover for fisher, with scattered pockets of vegetation or other features.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ • In focus landscapes, apply this where it does not conflict with safety and where hiding cover is likely to remain following wildfire or prescribed burning.

Table A-13. Sierra Marten

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Sierra Marten – <i>Desired Conditions</i>		
Desired Condition (SPEC-SM-DC) 01 Risk of large high-severity fire is reduced from current conditions in marten habitat core areas.	Desired Condition (SPEC-SM-DC) 01 Same as Alternative B.	Desired Condition (SPEC-SM-DC) 01 Same as Alternative B.
Desired Condition (SPEC-SM-DC) 02 Within marten core habitat, vegetation is trending toward desired conditions for terrestrial and riparian vegetation.	Desired Condition (SPEC-SM-DC) 02 Same as Alternative B.	Desired Condition (SPEC-SM-DC) 02 Same as Alternative B.
Desired Condition (SPEC-SM-DC) 03 Marten habitat is well distributed throughout the marten's range, providing for foraging, denning, and resting habitat and movement across large landscapes.	Desired Condition (SPEC-SM-DC) 03 Same as Alternative B.	Desired Condition (SPEC-SM-DC) 03 Same as Alternative B.
SPECIES DIRECTION – Sierra Marten – <i>Guidelines</i>		
Guideline (SPEC-SM-GDL) 01 Within marten core habitat, retain overtopping and multi-storied canopy conditions in patches consistent with vegetation desired conditions, including some shade-tolerant understory trees such as firs, especially in drainages, swales and canyon bottoms and on north- and east-facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale. Exception: <ul style="list-style-type: none"> Does not apply to community buffers. 	Guideline (SPEC-SM-GDL) 01 Within marten core habitat, retain overtopping and multi-storied canopy conditions in patches consistent with vegetation desired conditions, including some shade-tolerant understory trees such as firs, especially in drainages, swales and canyon bottoms and on north- and east-facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale.	Guideline (SPEC-SM-GDL) 01 Same as Alternative B.
Guideline (SPEC-SM-GDL) 02 No similar guideline, see potential management approach.	Guideline (SPEC-SM-GDL) 02 Maintain or increase understory heterogeneity in marten denning habitat to promote hiding cover such as shrub patches, coarse woody debris, and slash piles following vegetation treatments. Project design should include non-linear edges to decrease susceptibility to predation.	Guideline (SPEC-SM-GDL) 02 No similar guideline, see potential management approach.

Table A-14. Bighorn Sheep

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Bighorn Sheep – <i>Desired Conditions</i>		
Desired Condition (SPEC-SHP-GDL) 01 An adequate amount of suitable habitat supports persistent populations of bighorn sheep. These habitat patches include unforested openings supporting productive plant communities with a variety of forage species in and near adequate steep rocky escape terrain throughout the elevational range of mountain ranges. These areas meet different seasonal needs for each sex for feeding, night beds, birthing sites, lamb rearing, and migration routes between suitable habitat patches.	Desired Condition (SPEC-SHP-GDL) 01 Same as Alternative B.	Desired Condition (SPEC-SHP-GDL) 01 Same as Alternative B.
Desired Condition (SPEC-SHP-GDL) 02 The risk of disease transmission from domestic sheep and goats to bighorn sheep (based upon the best available risk assessment model) is reduced to the maximum extent practicable.	Desired Condition (SPEC-SHP-GDL) 02 Same as Alternative B.	Desired Condition (SPEC-SHP-GDL) 02 Same as Alternative B.
SPECIES DIRECTION – Bighorn Sheep – <i>Goals</i>		
Goal (SPEC-SHP-GOAL) 01 Coordinate with the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and adjacent national forests to conduct a risk assessment of pack goat use on National Forest System lands and develop mitigation strategies to manage the risk of disease transmission, if needed.	Goal (SPEC-SHP-GOAL) 01 Same as Alternative B.	Goal (SPEC-SHP-GOAL) 01 Same as Alternative B.
SPECIES DIRECTION – Bighorn Sheep – <i>Standards</i>		
Standard (SPEC-SHP-STD) 01 Do not allow domestic sheep or goat grazing or pack goat use adjacent to bighorn sheep populations where relevant bighorn sheep risk assessment models show there is a high risk of contact and spread of disease, unless risks can be adequately mitigated.	Standard (SPEC-SHP-STD) 01 Same as Alternative B.	Standard (SPEC-SHP-STD) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Standard (SPEC-SHP-STD) 02 Manage recreation, or other disturbances, where research has found it to cause Sierra Nevada bighorn sheep to avoid important habitat as described in the Sierra Nevada Bighorn Sheep Recovery Plan or other guidance from the U.S. Fish and Wildlife Service.	Standard (SPEC-SHP-STD) 02 Same as Alternative B.	Standard (SPEC-SHP-STD) 02 Same as Alternative B.
SPECIES DIRECTION – Bighorn Sheep – Suitability		
Suitability (SPEC-SHP-SUIT) 01 Domestic sheep or goats, including pack goats, are not suitable within the high-risk area of disease transmission to Sierra Nevada bighorn sheep identified in the most recent bighorn sheep risk assessment.	Suitability (SPEC-SHP-SUIT) 01 Same as Alternative B.	Suitability (SPEC-SHP-SUIT) 01 Same as Alternative B.

Table A-15. California Spotted Owl

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – California Spotted Owl – Desired Conditions		
Desired Condition (SPEC-CSO-DC) 01 California spotted owl protected activity centers provide high quality habitat that contributes to their successful reproduction. Protected activity centers encompass habitat that is most likely essential for nesting and roosting. The habitat has a high canopy cover with multiple layers of tree canopy and many large trees and snags.	Desired Condition (SPEC-CSO-DC) 01 Same as Alternative B.	Desired Condition (SPEC-CSO-DC) 01 Same as Alternative B.
Desired Condition (SPEC-CSO-DC) 02 Within protected activity centers, canopy cover, basal area, and large tree density tends towards the upper end of the range of forest vegetation desired conditions.	Desired Condition (SPEC-CSO-DC) 02 Same as Alternative B.	Desired Condition (SPEC-CSO-DC) 02 Same as Alternative B.
Desired Condition (SPEC-CSO-DC) 03 Where the majority of a California spotted owl protected activity center contains dry vegetation types, the vegetation is resilient towards fire, drought, insects and pathogens, and is trending towards terrestrial ecosystem desired conditions.	Desired Condition (SPEC-CSO-DC) 03 Same as Alternative B.	Desired Condition (SPEC-CSO-DC) 03 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (SPEC-CSO-DC) 04 At least 40-60% of each occupied California spotted owl territory consists of the highest quality nesting and roosting habitat. These acres are in large enough patches to provide interior stand conditions, generally 1-2 tree heights from an edge. For areas where multiple territories comprise >75% of a watershed (typically a HUC 8 unit and > 10,000 acres in size) the desired condition is to maintain at least 30-50% of the watershed in the mature tree habitat at moderate and high canopy cover.	Desired Condition (SPEC-CSO-DC) 04 Same as Alternative B.	Desired Condition (SPEC-CSO-DC) 04 Same as Alternative B.
Desired Condition (SPEC-CSO-DC) 05 The Forest supports conditions for a sustainable network of dynamic, resilient, and widely distributed California spotted owl nest or roost sites across heterogeneous landscapes.	Desired Condition (SPEC-CSO-DC) 05 Same as Alternative B.	Desired Condition (SPEC-CSO-DC) 05 Same as Alternative B.
SPECIES DIRECTION – California Spotted Owl – Standards		
No similar standard	Standard (SPEC-CSO-STD) 01 Use prescribed fire or hand treatments in California spotted owl protected activity centers. Where this is not feasible and where avoiding protected activity centers would significantly compromise the overall effectiveness of the landscape fire and fuels strategy, mechanical treatments may be used.	No similar standard
Standard (SPEC-CSO-STD) 01 Do not mechanically treat within the 10-acre area surrounding the nest, or known roost site where nest site is unknown.	Standard (SPEC-CSO-STD) 02 Same as alternative B Standard (SPEC-CSO-STD) 01 Do not mechanically treat within the 10-acre area surrounding the nest, or known roost site where nest site is unknown.	Standard (SPEC-CSO-STD) 01 Do not mechanically treat within the 10-acre area surrounding the nest.

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Alternative B	Alternative C and E	Alternative D
<p>Standard (SPEC-CSO-STD) 02 Mechanical vegetation treatments that do not reduce habitat quality are allowed within protected activity centers. However, mechanical vegetation treatments that reduce habitat quality are limited to no more than one third of the protected activity center. If habitat quality reduction is necessary, treatment must increase the stand quadratic mean diameter and maintain a minimum of 50% canopy cover, habitat quality must be maintained in the highest quality nesting and roosting habitat (CWHR 6, 5D, 5M), and habitat quality must increase again post treatment.</p>	<p>Standard (SPEC-CSO-STD) 03 Apply mechanical vegetation treatment to no more than one third of the protected activity center, with a focus on the drier sites or areas outside of the natural range of variation. Habitat quality must be maintained in the highest quality nesting and roosting habitat (CWHR 6, 5D, 5M).</p>	<p>Standard (SPEC-CSO-STD) 02 Same as Alternative B</p>
<p>Standard (SPEC-CSO-STD) 03 In California spotted owl territories, design vegetation treatments to retain clumps or groups of large trees, some with dense tree cover, in a well-distributed and irregular pattern. Design treatments for individual trees, clumps of trees, and openings and focus on promoting large trees greater than 24 inches in diameter and especially very large trees 30 inches in diameter or larger. In territories that do not currently meet the territory desired condition (DC-04), do not reduce habitat quality in the existing large tree habitat (CWHR 5D and 5M) wherever it exists in the territory.</p> <p>Exception:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ where there is no overlap the WHMA 	<p>Standard (SPEC-CSO-STD) 04 In California spotted owl territories, design vegetation treatments to retain clumps or groups of large trees, some with dense tree cover, in a well-distributed and irregular pattern. Design treatments for individual trees, clumps of trees, and openings and focus on removing smaller trees (less than 55 feet tall).</p>	<p>Standard (SPEC-CSO-STD) 03 In California spotted owl territories, design vegetation treatments to retain clumps or groups of large trees, some with dense tree cover, in a well-distributed and irregular pattern. Design treatments for individual trees, clumps of trees, and openings and focus on promoting large trees greater than 24 inches in diameter and especially very large trees 30 inches in diameter or larger. In territories that do not currently meet the territory desired condition (DC-04), do not reduce habitat quality in the existing large tree habitat (CWHR 5D and 5M) wherever it exists in the territory.</p> <p>Exception:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in the CWPZ • In focus landscapes, CWHR 5M and 5D stands can be treated when necessary to create functional fuelbreak systems.

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Alternative B	Alternative C and E	Alternative D
<p>Standard (SPEC-CSO-STD) 04 For all treatments within protected activity centers, maintain connectivity between the rest of the protected activity center and habitat around the known nest site or, where the nest site is not known, the most recent known roost site.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> Does not apply to community buffers 	<p>Standard (SPEC-CSO-STD) 05 For all treatments within protected activity centers, maintain connectivity between the rest of the protected activity center and habitat around the known nest site or, where the nest site is not known, the most recent known roost site.</p>	<p>Standard (SPEC-CSO-STD) 04 For all treatments within protected activity centers, maintain connectivity between the rest of the protected activity center and habitat around the known nest site or, where the nest site is not known, the most recent known roost site.</p> <p>Exception:</p> <ul style="list-style-type: none"> Does not apply to community buffers In focus landscapes, do not create openings (greater than 2 acres) or reduce canopy cover to less than 40% adjacent to the 10-acre area around the known nest site
<p>Standard (SPEC-CSO-STD) 05 Where prescribed fire is used in protected activity centers, apply mitigation measures as needed to minimize loss of or damage to known nest and roost trees.</p>	<p>Standard (SPEC-CSO-STD) 06 Same as Alternative B.</p>	<p>Standard (SPEC-CSO-STD) 05 Same as Alternative B.</p>
<p>Standard (SPEC-CSO-STD) 06 Where prescribed fire is used in California spotted owl territories, design burns so high-severity burn patches are generally less than 10 acres in size and do not exceed 100 acres to minimize long-term impacts on habitat.</p>	<p>Standard (SPEC-CSO-STD) 07 Same as Alternative B.</p>	<p>Standard (SPEC-CSO-STD) 06 Where prescribed fire is used in California spotted owl territories, design burns so high-severity burn patches in suitable spotted owl habitat are generally less than 10 acres in size and do not exceed 100 acres to minimize long-term impacts on habitat.</p>
<p>Standard (SPEC-CSO-STD) 07 Design fuels treatments in protected activity centers to manage for lower intensity fire effects (generally flame lengths averaging 4 to 6 feet) to reduce surface and ladder fuels and minimize impacts to overstory canopy, which will provide conditions for continued use of nesting and roosting.</p>	<p>Standard (SPEC-CSO-STD) 08 Same as Alternative B Standard (SPEC-CSO-STD) 07 Design fuels treatments in protected activity centers to manage for lower intensity fire effects (generally flame lengths averaging 4 to 6 feet) to reduce surface and ladder fuels and minimize impacts to overstory canopy, which will provide conditions for continued use of nesting and roosting.</p>	<p>Standard (SPEC-CSO-STD) 07 Design fuels treatments in protected activity centers to manage for lower intensity fire effects (generally flame lengths averaging 4 to 6 feet) to reduce surface and ladder fuels and minimize impacts to overstory canopy that provides nesting or roosting habitat.. In areas that do not provide high-quality nesting and roosting habitat, higher intensity effects are allowed as long as overstory conditions in stands that provide owl habitat are not significantly modified.</p> <p>Exception:</p> <ul style="list-style-type: none"> In focus landscapes, standard is applied to protected activity centers occupied within the last 5 years, and overstory conditions can be modified within fuelbreaks

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
No similar standard	Standard (SPEC-CSO-STD) 09 If a California spotted owl protected activity center burns, salvage harvest is not permitted (regardless of the severity of fire effects). This standard does not apply if the protected activity center is retired.	No similar standard

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Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – California Spotted Owl – Guidelines		
<p>Guideline (SPEC-CSO-GDL) 01 To minimize disturbance that may lead to breeding failure, during the breeding season (March 1 to August 15 or following current regional guidance) apply a limited operating period prohibiting:</p> <ol style="list-style-type: none"> mechanical harvest within approximately 0.25 mile of the nest or known roost site; Prescribed burning within 500 feet of the nest <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> Waived if nesting owls are absent. Waived for activities addressing public safety issues. Waived for activities of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. The limited operating period buffer distance may be modified based upon a biologist's evaluation of the area needed to shield a nest site from disturbance considering topographic features, vegetation or other screening. Waived or modified when benefit to California spotted owl habitat resilience outweighs potential short term risk Waived or modified in up to 10% of PACs per year per national forest where necessary to facilitate the benefits of using early season prescribed fire <p>Exceptions:</p> <ul style="list-style-type: none"> Does not apply in community buffers where they do not overlap WHMA 	<p>Guideline (SPEC-CSO-GDL) 01 To minimize disturbance that may lead to breeding failure, during the early breeding season (March 1 to July 15 or following current regional guidance) apply a limited operating period prohibiting:</p> <ol style="list-style-type: none"> Road construction or extensive heavy mechanized equipment within approximately 0.25 mile of the nest or known roost site; Power equipment like chainsaws or pole pruners within 300 feet of the nest site or known roost site; Low-level helicopter flights or hovering over nests; Landing of helicopters within 0.5 mile of the nest; or Extensive hand tool activities like fireline construction for prescribed burning within 300 feet of the nest site <p>If there is no nest or roost site, then it applies to the entire protected activity center.</p> <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> Waived if nesting owls are absent. Waived for activities of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. The limited operating period buffer distance may be modified based upon a biologist's evaluation of the area needed to shield a nest site from disturbance considering topographic features, vegetation or other screening. Activities b), c), d), and e) may be waived for prescribed burning projects when prescribed burning is the primary vegetation treatment. 	<p>Guideline (SPEC-CSO-GDL) 01 Same as alternative B with the following exceptions:</p> <ul style="list-style-type: none"> Does not apply to community buffer Does not apply in the CWPZ

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Combined in SPEC-CSO-GDL-01</p>	<p>Guideline (SPEC-CSO-GDL) 02 To minimize disturbance that may lead to breeding failure, apply a limited operating period during the breeding season (March 1 to August 15 or following current regional guidance) for prescribed burning associated with mechanical vegetation treatments completed within the last 3 years within 0.25 mile of an active nest.</p> <p>The limited operating period may be modified or waived where necessary to allow for early season prescribed fire in up to 10 percent of the total number of protected activity centers per year on the national forest. A limited operating period is not required where prescribed burning is the primary treatment and not associated with a prior mechanical vegetation treatment</p>	<p>Combined in SPEC-CSO-GDL-01</p>

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
<p>Guideline (SPEC-CSO-GDL) 02 Use information on occupancy and based upon areas with the highest risk of large-scale, high severity wildfire or severe tree mortality from insects and drought when prioritizing protected activity centers for treatment where treatment is deemed necessary.</p> <p>Priority based on occupancy:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive. <p>Design treatments to maintain and promote the highest quality nesting and roosting habitat available.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ where there is no overlap the WHMA 	<p>Guideline (SPEC-CSO-GDL) 03 Use information on occupancy and resiliency (or departure from the natural range of variation) when prioritizing protected activity centers for treatment where mechanical vegetation treatment is deemed necessary.</p> <p>Priority based on resilience:</p> <ol style="list-style-type: none"> 1. Least resilient. 2. Moderately resilient but putting neighboring high quality areas at risk. 3. Most resilient. <p>Priority based on occupancy:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive. 	<p>Guideline (SPEC-CSO-GDL) 02 Use information on occupancy and based upon areas with the highest risk of large-scale, high severity wildfire or severe tree mortality from insects and drought when prioritizing protected activity centers for treatment where treatment is planned.</p> <p>Priority based on occupancy:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ • Does not apply to fuelbreaks in focus landscapes • For other treatments in focus landscapes, priority based on occupancy: <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles or pairs. 2. Currently occupied by territorial singles. 3. Currently occupied by pairs. 4. Currently reproductive or historically reproductive and sufficient nesting habitat remains to support reproduction.
No similar guideline	<p>Guideline (SPEC-CSO-GDL) 04 Mechanical treatments in protected activity centers should not exceed 5 percent per year and 10 percent per decade of the total acres of California spotted owl protected activity centers.</p>	No similar guideline

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – California Spotted Owl – Suitability		
Suitability (SPEC-CSO-SUIT) 01 California spotted owl protected activity centers are not suitable for timber production. Timber harvest is allowed for other multiple use purposes including safety, and restoration towards desired conditions	Suitability (SPEC-CSO-SUIT) 01 California spotted owl territories are not suitable for timber production (includes protected activity centers). Timber harvest is allowed for other multiple use purposes including safety, and restoration towards desired conditions	Suitability (SPEC-CSO-SUIT) 01 Same as Alternative B.

Table A-16. Great Gray Owl

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Great Gray Owl – Desired Conditions		
Desired Condition (SPEC-GGO-DC) 01 Habitat within great gray owl protected activity centers provide high quality habitat for nesting and roosting that contributes to their successful reproduction. The habitat has forested areas with high canopy cover, multiple layers, and many large trees and snags. Meadow habitat in a protected activity centers supports a sufficient prey species populations to provide a food source for great gray owls through the reproductive period, and natural structures at the edges of meadows to provide opportunities for hunting perches.	Desired Condition (SPEC-GGO-DC) 01 Same as Alternative B.	Desired Condition (SPEC-GGO-DC) 01 Same as Alternative B.
Desired Condition (SPEC-GGO-DC) 02 Great gray owl territory habitat includes forested areas with upper natural range of variation target of large conifer snags or large live oaks.	Desired Condition (SPEC-GGO-DC) 02 Same as Alternative B.	Desired Condition (SPEC-GGO-DC) 02 Same as Alternative B.
SPECIES DIRECTION – Great Gray Owl – Guidelines		
Guideline (SPEC-GGO-GDL) 01 In meadow areas of great gray owl protected activity centers, manage to enhance habitat for prey species.	Guideline (SPEC-GGO-GDL) 01 In meadow areas of great gray owl protected activity centers, manage to enhance habitat for prey species. Refrain from grazing between February 15 and August 15 unless meadow assessment indicates vegetation height standards and range condition and trend standards appropriate to the meadow type are met.	Guideline (SPEC-GGO-GDL) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
<p>Guideline (SPEC-GGO-GDL) 02 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (typically February 15 to August 15, or following current Regional guidance), apply a limited operating period of an active great gray owl nest stand (i.e., not during an inactive nesting year) prohibiting:</p> <ul style="list-style-type: none"> a) Road construction or extensive heavy mechanized equipment within approximately 0.25 miles of the nest or known roost site; b) Power equipment like chainsaws or pole pruners within 300 feet, of the nest site or known roost site; c) Discretionary low level helicopter flights over nests; d) Discretionary landing of helicopters within 0.25 mile of the nest; or e) Extensive hand tool activities like fire line construction for prescribed burning within 300 feet of the nest site <p>The limited operating period may be waived for vegetation treatments of limited scope and duration, if a biologist determines chicks have fledged, or that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be reduced.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers where they do not overlap WHMA 	<p>Guideline (SPEC-GGO-GDL) 02 During mechanical vegetation management and road construction activities, apply a limited operating period prohibiting vegetation treatments and road construction within a protected activity center during the nesting and rearing period (typically February 15 to August 15, or following current Regional guidance) unless an inactive nesting year. The limited operating period may be waived for vegetation treatments of limited scope and duration, if a biologist determines chicks have fledged, or that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be reduced.</p>	<p>Guideline (SPEC-GGO-GDL) 02 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (typically February 15 to August 15, or following current Regional guidance), apply a limited operating period of an active great gray owl nest stand (i.e., not during an inactive nesting year) prohibiting:</p> <ul style="list-style-type: none"> a) Road construction or extensive heavy mechanized equipment within approximately 0.25 miles of the nest or known roost site; b) Power equipment like chainsaws or pole pruners within 300 feet, of the nest site or known roost site; c) Discretionary low level helicopter flights over nests; d) Discretionary landing of helicopters within 0.25 mile of the nest; or e) Extensive hand tool activities like fire line construction for prescribed burning within 300 feet of the nest site <p>The limited operating period may be waived for vegetation treatments of limited scope and duration, if a biologist determines chicks have fledged, or that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be reduced.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers

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Alternative B	Alternative C and E	Alternative D
<p>Guideline (SPEC-GGO-GDL) 03 To provide habitat used by fledglings, retain or recruit pockets of dense canopy cover (greater than 65 percent) around nests and retain some low-hanging limbs, within 650 feet (200 meters) of a nest tree or activity center.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ where there is no overlap the WHMA 	<p>Guideline (SPEC-GGO-GDL) 03 To provide habitat used by fledglings, retain or recruit pockets of dense canopy cover (greater than 65 percent) around nests and retain some low-hanging limbs, within 650 feet (200 meters) of a nest tree or activity center.</p>	<p>Guideline (SPEC-GGO-GDL) 03 To provide habitat used by fledglings, retain or recruit pockets of dense canopy cover (greater than 65 percent) around nests and retain some low-hanging limbs, within 650 feet (200 meters) of a nest tree or activity center.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ

Table A-17. Northern Goshawk

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Northern Goshawk – <i>Desired Conditions</i>		
Desired Condition (SPEC-NG-DC) 01 Northern goshawk protected activity centers provide habitat conditions that support nesting and successful reproduction, including high canopy cover, with large trees and old forest characteristics.	Desired Condition (SPEC-NG-DC) 01 Same as Alternative B.	Desired Condition (SPEC-NG-DC) 01 Same as Alternative B.
SPECIES DIRECTION – Northern Goshawk – <i>Standards</i>		
No similar standard	<p>Standard (SPEC-NG-STD) 01 Mechanical vegetation treatments shall not exceed 5 percent per year and 10 percent per decade of the total acres in northern goshawk protected activity centers.</p> <p>a) Mechanical treatments may be conducted to meet fuels objectives in protected activity centers located in wildland-urban intermix defense zones. When protected activity centers are located in general fire zones, mechanical treatments are allowed where prescribed fire is not feasible and where avoiding protected activity centers would significantly compromise the overall effectiveness of the landscape fire and fuels strategy. Mechanical treatments should be designed to maintain habitat structure and function of the protected activity center.</p>	No similar standard

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Alternative B	Alternative C and E	Alternative D
<p>No similar standard</p>	<p>b) While mechanical treatments may be conducted in protected activity centers located in wildland-urban intermix defense zones and, in some cases, general fire zones, they are prohibited within a 500-foot radius buffer around a northern goshawk nest (activity center) within the designated protected activity center. Prescribed burning is allowed within the 500-foot radius buffer. Hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches diameter), may be conducted prior to burning as needed to protect important elements of northern goshawk habitat.</p> <p>In protected activity centers located outside the wildland-urban intermix, only use prescribed fire treatments to reduce surface and ladder fuels. In forested stands with overstory trees 11 inches diameter and greater, prescribed fire treatments shall have an average flame length of 4 feet or less. Hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches diameter), may be conducted prior to burning as needed to protect important elements of northern goshawk habitat.</p>	<p>No similar standard</p>
<p>SPECIES DIRECTION – Northern Goshawk – Guidelines</p>		
<p>Guideline (SPEC-NG-GDL) 01 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (February 15 to September 15 or following current regional guidance), apply a limited operating period prohibiting:</p> <ul style="list-style-type: none"> a) Road construction or extensive heavy mechanized equipment within approximately 0.25 miles of the nest site, unless northern goshawks are not nesting b) Power equipment like chainsaws or pole pruners within 300 feet of the nest site or known roost site; 	<p>Guideline (SPEC-NG-GDL) 01 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (February 15 to September 15 or following current regional guidance), apply a limited operating period prohibiting:</p> <ul style="list-style-type: none"> a) Road construction or extensive heavy mechanized equipment within approximately 0.25 miles of the nest site, unless northern goshawks are not nesting b) Power equipment like chainsaws or pole pruners within 300 feet of the nest site or known roost site; 	<p>Guideline (SPEC-NG-GDL) 01 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (February 15 to September 15 or following current regional guidance), apply a limited operating period prohibiting:</p> <ul style="list-style-type: none"> a) Road construction or extensive heavy mechanized equipment within approximately 0.25 miles of the nest site, unless northern goshawks are not nesting b) Power equipment like chainsaws or pole pruners within 300 feet of the nest site or known roost site;

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Alternative B	Alternative C and E	Alternative D
<p>c) Low level helicopter flights or hovering over nests;</p> <p>d) Landing of helicopters within 0.25 miles of the nest; or</p> <p>e) Extensive hand tool activities like fireline construction for prescribed burning within 300 feet of the nest site</p> <p>Where nest site within a protected activity center is unknown, apply the limited operating period to the protected activity center, or determine the nest stand location.</p> <p>A limited operating period may be waived for vegetation treatments of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be modified.</p> <p>Breeding season limited operating period restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 5 percent of any northern goshawk protected activity centers per year on a national forest.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers where they do not overlap WHMA 	<p>c) Low level helicopter flights or hovering over nests;</p> <p>d) Landing of helicopters within 0.25 miles of the nest; or</p> <p>e) Extensive hand tool activities like fireline construction for prescribed burning within 300 feet of the nest site</p> <p>Where nest site within a protected activity center is unknown, apply the limited operating period to the protected activity center, or determine the nest stand location.</p> <p>A limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> 1. For vegetation treatments of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. 2. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be modified. 3. Activities b), c), d), and e) may be waived for prescribed burning projects when prescribed burning is the primary vegetation treatment. 	<p>c) Low level helicopter flights or hovering over nests;</p> <p>d) Landing of helicopters within 0.25 miles of the nest; or</p> <p>e) Extensive hand tool activities like fireline construction for prescribed burning within 300 feet of the nest site</p> <p>Where nest site within a protected activity center is unknown, apply the limited operating period to the protected activity center, or determine the nest stand location.</p> <p>A limited operating period may be waived for vegetation treatments of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be modified.</p> <p>Breeding season limited operating period restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 10 percent of any northern goshawk protected activity centers per year on a national forest.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply to community buffer

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Alternative B	Alternative C and E	Alternative D
<p>Guideline (SPEC-NG-GDL) 02 Use information on occupancy and resiliency (or departure from the natural range of variation) when prioritizing protected activity centers for treatment where treatment is deemed necessary.</p> <p>Priority based on resilience:</p> <ol style="list-style-type: none"> 1. Least resilient. 2. Moderately resilient but putting neighboring high quality areas at risk. 3. Most resilient. <p>Priority based on occupancy:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive. <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ where there is no overlap the WHMA 	<p>Guideline (SPEC-NG-GDL) 02 Use information on occupancy and resiliency (or departure from the natural range of variation) when prioritizing protected activity centers for treatment where mechanical vegetation treatment is deemed necessary.</p> <p>Priority based on resilience:</p> <ol style="list-style-type: none"> 1. Least resilient. 2. Moderately resilient but putting neighboring high quality areas at risk. 3. Most resilient. <p>Priority based on occupancy:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive. 	<p>Guideline (SPEC-NG-GDL) 02 Use information on occupancy and departure from the natural range of variation) in prioritizing protected activity centers for treatment where treatment is planned.</p> <p>Priority based on occupancy outside of focus landscapes:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive <p>Priority based on occupancy in focus landscapes:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles or pairs. 2. Currently occupied by territorial singles. 3. Currently occupied by pairs. 4. Currently reproductive or historically reproductive and sufficient nesting habitat remains to support reproduction. <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply in CWPZ
<p>No similar guideline.</p>	<p>Guideline (SPEC-NG-GDL) 03 Locate fuels treatments to minimize impacts to northern goshawk protected activity centers.</p> <p>When treatment areas must intersect protected activity centers and choices can be made about which protected activity centers to enter, preferentially select those that are least likely to contribute to productivity presently, or select unoccupied or historically unproductive protected activity centers.</p> <p>When designing treatment unit intersections with protected activity centers, limit treatment acres to those necessary to achieve strategic placement objectives and avoid treatments adjacent to nest stands whenever possible.</p>	<p>Guideline (SPEC-NG-GDL) 03 Same as Alternative C</p>

Table A-18. Willow Flycatcher

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Willow Flycatcher – Standards		
Standard (SPEC-WF-STD) 01 In willow flycatcher occupied sites receiving late-season grazing, if habitat conditions are not supporting the willow flycatcher or are trending downward, modify or suspend grazing at those sites.	Standard (SPEC-WF-STD) 01 Same as Alternative B.	Standard (SPEC-WF-STD) 01 Same as Alternative B.
Standard (SPEC-WF-STD) 02 During allotment management planning (AMP) or when authorizing livestock or pack stock use, determine occupancy of willow flycatcher in affected meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component capable of providing willow flycatcher habitat, using established protocols.	Standard (SPEC-WF-STD) 02 Same as Alternative B.	Standard (SPEC-WF-STD) 02 Same as Alternative B.
Standard (SPEC-WF-STD) 03 In meadows with occupied willow flycatcher sites, allow only late-season grazing (after August 15) in the entire meadow. This standard may be waived if an interdisciplinary team together with the affected grazing permittee has developed and implemented a site-specific meadow management strategy. The strategy must focus on protecting the nest site and associated habitat during the breeding season and the long-term sustainability of suitable habitat at breeding sites. It may use a mix of management tools, including grazing systems, structural improvements, and other exclusion by management techniques to protect willow flycatcher habitat.	Standard (SPEC-WF-STD) 03 In meadows with occupied willow flycatcher sites, allow only late-season grazing (after August 15) in the entire meadow. This standard may be waived if an interdisciplinary team together with the affected grazing permittee has developed and implemented a site-specific meadow management strategy. The strategy must focus on protecting the nest site and associated habitat during the breeding season and the long-term sustainability of suitable habitat at breeding sites. It may use a mix of management tools, including grazing systems, structural improvements, and other exclusion by management techniques to protect willow flycatcher habitat.	Standard (SPEC-WF-STD) 03 Same as Alternative B.

Table A-19. Yosemite Toad

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Yosemite Toad – Desired Conditions		
Desired Condition (SPEC-YT-DC) 01 Livestock use does not alter breeding and rearing habitat within Yosemite toad occupied meadows.	Desired Condition (SPEC-YT-DC) 01 Same as Alternative B.	Desired Condition (SPEC-YT-DC) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (SPEC-YT-DC) 02 Yosemite toad occupancy is stable or increasing across the species range and their habitats are supporting reproduction and recruitment.	Desired Condition (SPEC-YT-DC) 02 Same as Alternative B.	Desired Condition (SPEC-YT-DC) 02 Same as Alternative B.
SPECIES DIRECTION – Yosemite Toad – Standards		
Standard (SPEC-YT-STD) 01 In years with well above average precipitation when Yosemite toad reproduction and recruitment is very high across all population areas, annual operating instructions for grazing may not authorize grazing in occupied meadows throughout the grazing season.	Standard (SPEC-YT-STD) 01 Same as Alternative B.	Standard (SPEC-YT-STD) 01 Same as Alternative B.
SPECIES DIRECTION – Yosemite Toad – Guidelines		
Guideline (SPEC-YT-GDL) 01 Grazing management practices such as deferred seasonal grazing, meadow fencing, and grazing period should be used to keep livestock away from known occupied sites and highly suitable breeding and rearing habitats including breeding pools.	Guideline (SPEC-YT-GDL) 01 Grazing management practices such as deferred seasonal grazing, meadow fencing, and grazing period should be used to keep livestock away from known occupied sites and highly suitable breeding and rearing habitats including breeding pools.	Guideline (SPEC-YT-GDL) 01 Same as Alternative B.
Guideline (SPEC-YT-GDL) 02 Livestock grazing should be excluded from areas with standing water and saturated soils in meadows with breeding areas and associated streams and springs occupied by Yosemite toads (through metamorphosis).	Guideline (SPEC-YT-GDL) 02 Same as Alternative B.	Guideline (SPEC-YT-GDL) 02 Same as Alternative B.
Guideline (SPEC-YT-GDL) 03 Specific Yosemite toad breeding and rearing season dates should be determined locally.	Guideline (SPEC-YT-GDL) 03 Same as Alternative B.	Guideline (SPEC-YT-GDL) 03 Same as Alternative B.
Guideline (SPEC-YT-GDL) 04 Grazing management practices should be used to avoid trampling of young of year toads by livestock and alteration of breeding habitat through the end of the permitted grazing season.	Guideline (SPEC-YT-GDL) 04 Same as Alternative B.	Guideline (SPEC-YT-GDL) 04 Same as Alternative B.
Guideline (SPEC-YT-GDL) 05 When utilization and/or disturbance indicators are reached within representative Yosemite toad occupied meadows and breeding habitats; livestock should be removed from the grazing area.	Guideline (SPEC-YT-GDL) 05 Same as Alternative B.	Guideline (SPEC-YT-GDL) 05 Same as Alternative B.

Table A-20. Fish

Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Lahontan Cutthroat Trout – Standards		
Standard SNF (SPEC-LCT-STD) 01 In stream reaches occupied by or identified as essential habitat in the conservation assessment for the Lahontan cutthroat trout, limit streambank disturbance from livestock to 10 percent of the occupied or essential habitat stream reach. Implement corrective action where streambank disturbance limits have been exceeded.	Standard SNF (SPEC-LCT-STD) 01 Same as Alternative B.	Standard SNF (SPEC-LCT-STD) 01 Same as Alternative B.
SPECIES DIRECTION – Lahontan Cutthroat Trout – Guidelines		
Guideline SNF (SPEC-LCT-GDL) 01 Establish a 200-foot zone on each side of all reaches of the tributaries to Portuguese Creek and Cow Creek where Lahontan cutthroat trout currently occur and on all Class I, II, and III tributaries above those reaches. Apply the following within this zone to avoid adverse effects to the species: <ul style="list-style-type: none"> a. Trees should be felled and yarded away from the stream course; b. Slash and other debris should be kept out of stream courses, except for the purpose of fish habitat improvement. Woody debris removed from stream courses will be disposed of by methods that do not adversely affect the species or occupied habitat. 	Guideline SNF (SPEC-LCT-GDL) 01 Same as Alternative B.	Guideline SNF (SPEC-LCT-GDL) 01 Same as Alternative B.
SPECIES DIRECTION – Paiute Cutthroat Trout – Standards		
Standard SNF (SPEC-PCTR-STD) 01 In stream reaches occupied by or identified as essential habitat in the recovery plan for the Paiute cutthroat trout, limit stream bank disturbance from livestock to 10 percent of the occupied or essential habitat stream reach. Take corrective action where stream bank disturbance limits have been exceeded.	Standard SNF (SPEC-PCTR-STD) 01 Same as Alternative B.	Standard SNF (SPEC-PCTR-STD) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
SPECIES DIRECTION – Golden Trout – Goals		
Goal (SPEC-GT-GOAL) 01 Continue to coordinate and collaborate with California Department of Fish and Wildlife to implement and renew the California Golden Trout Conservation Assessment and Strategy.	Goal (SPEC-GT-GOAL) 01 Same as Alternative B.	Goal (SPEC-GT-GOAL) 01 Same as Alternative B.
SPECIES DIRECTION – Little Kern Golden Trout – Standards		
Standard SQF (SPEC-LKGT-STD) 01 In stream reaches within Critical Habitat for the Little Kern golden trout, limit stream bank disturbance from livestock to 10 percent of the occupied or essential habitat stream reach. Implement corrective action where stream bank disturbance limits have been exceeded.	Standard SQF (SPEC-LKGT-STD) 01 Same as Alternative B.	Standard SQF (SPEC-LKGT-STD) 01 Same as Alternative B.

Table A-21. Invasive Species

Alternative B	Alternative C and E	Alternative D
INVASIVE SPECIES – Forestwide – Desired Conditions		
Desired Condition (INV-FW-DC) 01 Terrestrial and aquatic invasive species are controlled or eradicated when possible, and establishment of new populations is prevented.	Desired Condition (INV-FW-DC) 01 Same as Alternative B.	Desired Condition (INV-FW-DC) 01 Same as Alternative B.
Desired Condition (INV-FW-DC) 02 The area affected by invasive species and introduction of new invasive species is minimized.	Desired Condition (INV-FW-DC) 02 Same as Alternative B.	Desired Condition (INV-FW-DC) 02 Same as Alternative B.
INVASIVE SPECIES – Forestwide – Objectives		
Objective SNF (INV-FW-OBJ) 01 Within 15 years of plan approval, take action to control nonnative invasive plant species on at least 300 acres.	Objective SNF (INV-FW-OBJ) 01 Same as Alternative B.	Objective SNF (INV-FW-OBJ) 01 Same as Alternative B.
Objective SQF (INV-FW-OBJ) 01 Within 15 years of plan approval, take action to control nonnative invasive plant species on at least 800 acres.	Objective SQF (INV-FW-OBJ) 01 Same as Alternative B.	Objective SQF (INV-FW-OBJ) 01 Same as Alternative B.
INVASIVE SPECIES – Forestwide – Goals		
Goal (INV-FW-GOAL) 01 Coordinate and cooperate with local, State and Federal agencies and Tribes to manage and control invasive and nonnative species.	Goal (INV-FW-GOAL) 01 Same as Alternative B.	Goal (INV-FW-GOAL) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Goal (INV-FW-GOAL) 02 Work with Tribes to determine priority areas for weed prevention and control, especially focused on traditional gathering areas that are threatened by weed infestations. Consult with Tribes before using pesticides or herbicides that may affect traditional gathering.	Goal (INV-FW-GOAL) 02 Same as Alternative B.	Goal (INV-FW-GOAL) 02 Same as Alternative B.
Goal (INV-FW-GOAL) 03 Coordinate with research and other organizations to evaluate the potential effects of climate change on the spread of invasive and nonnative species.	Goal (INV-FW-GOAL) 03 Same as Alternative B.	Goal (INV-FW-GOAL) 03 Same as Alternative B.
INVASIVE SPECIES – Forestwide – Standards		
Standard (INV-FW-STD) 01 When working in waterbodies with known aquatic invasive species, clean equipment and vehicles before moving to other waterbodies.	Standard (INV-FW-STD) 01 Same as Alternative B.	Standard (INV-FW-STD) 01 Same as Alternative B.
Standard (INV-FW-STD) 02 Hay, straw, and other crop-related forage or mulch products used for animal feed or bedding, soil stabilization land rehabilitation, or other purposes must be certified by California or Nevada and/or to the North American Invasive Species Management Association standards as being weed-free to prevent unintentional introduction of invasive species (unless in consultation with the Forest Service invasive species coordinator it is determined that certified weed-free material is not reasonably available).	Standard (INV-FW-STD) 02 Same as Alternative B.	Standard (INV-FW-STD) 02 Same as Alternative B.
Standard (INV-FW-STD) 03 Use an integrated pest management approach in the planning and implementation of all projects and activities.	Standard (INV-FW-STD) 03 Same as Alternative B	Standard (INV-FW-STD) 03 Same as Alternative B
Standard (INV-FW-STD) 04 When entering or exiting project sites, wash heavy equipment to prevent the spread of invasive species.	Standard (INV-FW-STD) 04 Same as Alternative B	Standard (INV-FW-STD) 04 Same as Alternative B

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Alternative B	Alternative C and E	Alternative D
INVASIVE SPECIES – Forestwide – Guidelines		
Guideline (INV-FW-GDL) 01 Projects should be designed to minimize invasive species spread by incorporating prevention and control measures into ongoing management or maintenance activities that involve ground disturbance, terrestrial or aquatic habitat alteration, or the possibility of spreading invasive species. When feasible, projects should include measures to use invasive species-free gravel, fill, and topsoil; and include follow-up inspections as needed and specified in regional or national strategies.	Guideline (INV-FW-GDL) 01 Same as Alternative B.	Guideline (INV-FW-GDL) 01 Same as Alternative B.
Guideline (INV-FW-GDL) 02 To the extent feasible, plant and seed materials used for revegetation, restoration, and rehabilitation projects should be native, genetically appropriate to the site, disease free, and capable of becoming established to restore natural species composition and ecosystem function.	Guideline (INV-FW-GDL) 02 Same as Alternative B.	Guideline (INV-FW-GDL) 02 Same as Alternative B.
Guideline (INV-FW-GDL) 03 Weed control and prevention measures should be included as necessary when issuing, amending or reissuing permits, including but not limited to livestock grazing, special uses, and pack stock operator permits.	Guideline (INV-FW-GDL) 03 Same as Alternative B.	Guideline (INV-FW-GDL) 03 Same as Alternative B.
Guideline (INV-FW-GDL) 04 Vegetation management projects on lands outside of wilderness should include measures to minimize the risk of introducing nonnative invasive species into wilderness.	Guideline (INV-FW-GDL) 04 Same as Alternative B.	Guideline (INV-FW-GDL) 04 Same as Alternative B.

Table A-22. Recreation

Alternative B	Alternative C and E	Alternative D
RECREATION – Forestwide – Desired Conditions		
Desired Condition (REC-FW-DC) 01 The diverse landscapes offer a variety of recreation settings for a broad range of year-round, nature-based recreation opportunities. Management focuses on settings that enhance the national forest recreation program niche.	Desired Condition (REC-FW-DC) 01 Same as Alternative B.	Desired Condition (REC-FW-DC) 01 Same as Alternative B.
Desired Condition (REC-FW-DC) 02 The design, condition, function, and accessibility of recreation facilities accommodate diverse cultures.	Desired Condition (REC-FW-DC) 02 Same as Alternative B.	Desired Condition (REC-FW-DC) 02 Same as Alternative B.
Desired Condition (REC-FW-DC) 03 Recreation opportunities provide a high level of visitor satisfaction. The range of recreation activities contribute to social and economic sustainability of local communities.	Desired Condition (REC-FW-DC) 03 Same as Alternative B.	Desired Condition (REC-FW-DC) 03 Same as Alternative B.
Desired Condition (REC-FW-DC) 04 Recreation opportunities are balanced with management capacity to manage sites to agency standards.	Desired Condition (REC-FW-DC) 04 Same as Alternative B.	Desired Condition (REC-FW-DC) 04 Same as Alternative B.
Desired Condition SQF (REC-FW-DC) 05 Recreation activities in the national forest have minimal impact on sensitive environments and resources, and complement the management intent of designated areas and other resources.	Desired Condition SQF (REC-FW-DC) 05 Same as Alternative B.	Desired Condition SQF (REC-FW-DC) 05 Same as Alternative B.
Desired Condition SNF (REC-FW-DC) 05 Areas of the national forest provide for a variety of activities with minimal impact on sensitive environments and resources.	Desired Condition SNF (REC-FW-DC) 05 Same as Alternative B.	Desired Condition SNF (REC-FW-DC) 05 Same as Alternative B.
Desired Condition (REC-FW-DC) 06 Visitors can connect with nature, culture, and history through a range of sustainable outdoor recreation opportunities, and are committed to resource stewardship.	Desired Condition (REC-FW-DC) 06 Same as Alternative B.	Desired Condition (REC-FW-DC) 06 Same as Alternative B.
Desired Condition (REC-FW-DC) 07 The management and operation of facilities are place based, integrated with other resources, and responsive to changing environmental, social, and economic conditions that may limit or alter access.	Desired Condition (REC-FW-DC) 07 Same as Alternative B.	Desired Condition (REC-FW-DC) 07 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (REC-FW-DC) 08 New developed recreation infrastructure is located in ecologically resilient landscapes, is economically sustainable, and responsive to public needs.	Desired Condition (REC-FW-DC) 08 Same as Alternative B.	Desired Condition (REC-FW-DC) 08 Same as Alternative B.
Desired Condition SQF (REC-FW-DC) 09 Camping outside of developed facilities does not adversely impact natural or cultural resources, lower the natural character of the landscape, is economically sustainable and can be effectively and sustainably managed for public health and safety.	Desired Condition SQF (REC-FW-DC) 09 Same as Alternative B.	Desired Condition SQF (REC-FW-DC) 09 Same as Alternative B.
Desired Condition SNF (REC-FW-DC) 09 Dispersed recreation occurs in areas outside of high visitation, developed facilities, or communities, and does not adversely impact natural or cultural resources.	Desired Condition SNF (REC-FW-DC) 09 Same as Alternative B.	Desired Condition SNF (REC-FW-DC) 09 Same as Alternative B.
Desired Condition (REC-FW-DC) 10 Permitted recreation uses, such as recreation special events or guided activities, are consistent with recreation settings, protect natural and cultural resources, and contribute to the economic sustainability of local communities.	Desired Condition (REC-FW-DC) 10 Same as Alternative B.	Desired Condition (REC-FW-DC) 10 Same as Alternative B.
Desired Condition (REC-FW-DC) 11 Recreation information is current, connecting people to the national forest through contemporary means including social media and available technology. Diverse communities are aware of recreation opportunities on the national forest.	Desired Condition (REC-FW-DC) 11 Same as Alternative B.	Desired Condition (REC-FW-DC) 11 Same as Alternative B.
Desired Condition (REC-FW-DC) 12 The national forest provides a range of year-round developed and dispersed recreation settings that offer a variety of motorized and nonmotorized opportunities and recreation experiences that provide satisfying experiences for the variety of visitor preferences.	Desired Condition (REC-FW-DC) 12 Same as Alternative B.	Desired Condition (REC-FW-DC) 12 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Condition (REC-FW-DC) 13 A sustainable system of trails provides access to destinations, provides for opportunities that connect to a larger trail system, provides linkages from local communities to the national forest, and is planned, designed and managed to be compatible with other resources.	Desired Condition (REC-FW-DC) 13 Same as Alternative B.	Desired Condition (REC-FW-DC) 13 Same as Alternative B.
Desired Condition (REC-FW-DC) 14 Trails meet trail management objectives based on trail class and designed use.	Desired Condition (REC-FW-DC) 14 Same as Alternative B.	Desired Condition (REC-FW-DC) 14 Same as Alternative B.
RECREATION – Forestwide – Goals		
Goal (REC-FW-GOAL) 01 Coordinate with local and national partners early in project development to elicit collaborative input on sustainable recreation opportunities, needs, and potential conflicts.	Goal (REC-FW-GOAL) 01 Same as Alternative B.	Goal (REC-FW-GOAL) 01 Same as Alternative B.
Goal (REC-FW-GOAL) 02 Manage dispersed recreation activities when evidence of impacts to natural resources emerge or are causing damage.	Goal (REC-FW-GOAL) 02 Same as Alternative B.	Goal (REC-FW-GOAL) 02 Same as Alternative B.
Goal (REC-FW-GOAL) 03 Consider summer transportation systems to connect people to nature, improve personal health, and increase access for underserved communities, minorities and urban youth.	Goal (REC-FW-GOAL) 03 Same as Alternative B.	Goal (REC-FW-GOAL) 03 Same as Alternative B.
Goal (REC-FW-GOAL) 04 Promote effective communication with gateway communities to help foster partnerships, inspire volunteers, educate the public, and support stewardship that contributes to funding, implementation of projects, and long-term maintenance of facilities.	Goal (REC-FW-GOAL) 04 Same as Alternative B.	Goal (REC-FW-GOAL) 04 Same as Alternative B.
Goal (REC-FW-GOAL) 05 Improve facilities through individual and community stewardship.	Goal (REC-FW-GOAL) 05 Same as Alternative B.	Goal (REC-FW-GOAL) 05 Same as Alternative B.
Goal (REC-FW-GOAL) 06 Collaborate with a variety of partners to provide stewardship and interpretive services that enhance responsible recreation and increase knowledge of related socioeconomic and environmental issues.	Goal (REC-FW-GOAL) 06 Same as Alternative B.	Goal (REC-FW-GOAL) 06 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Goal (REC-FW-GOAL) 07 Enhance stewardship and monitoring through increased volunteer program activities and partner contributions.	Goal (REC-FW-GOAL) 07 Same as Alternative B.	Goal (REC-FW-GOAL) 07 Same as Alternative B.
Goal (REC-FW-GOAL) 08 Provide accessible trails for individuals with mobility impairments.	Goal (REC-FW-GOAL) 08 Same as Alternative B.	Goal (REC-FW-GOAL) 08 Same as Alternative B.
Goals (REC-FW-GOAL) 09 Manage infrastructure to meet the minimum needs of the associated use and the annual maintenance capabilities of the national forest.	Goal (REC-FW-GOAL) 09 Same as Alternative B.	Goal (REC-FW-GOAL) 09 Same as Alternative B.
RECREATION – Forestwide – Objectives		
Objective SQF (REC-FW-OBJ) 01 Within 15 years of plan approval, maintain to standard 25 percent of the national forest's designated trail systems.	Objective SQF (REC-FW-OBJ) 01 Within 15 years of plan approval, maintain to standard 35 percent of the national forest's designated trail systems.	Objective SQF (REC-FW-OBJ) 01 Within 15 years of plan approval, maintain to standard 15 percent of the national forest's designated trail systems.
Objective SNF (REC-FW-OBJ) 01 Within 15 years of plan approval, maintain to standard 25 percent of the national forest's designated trail systems.	Objective SNF (REC-FW-OBJ) 01 Within 15 years of plan approval, maintain to standard 30 percent of the national forest's designated trail systems.	Objective SNF (REC-FW-OBJ) 01 Within 15 years of plan approval, maintain to standard 15 percent of the national forest's designated trail systems.
RECREATION – Forestwide – Standards		
Standard (REC-FW-STD) 01 The recreation opportunity spectrum will be used for decisions on facility and infrastructure design and development.	Standard (REC-FW-STD) 01 Same as Alternative B.	Standard (REC-FW-STD) 01 Same as Alternative B.
RECREATION – Forestwide – Guidelines		
Guideline (REC-FW-GDL) 01 When locating new recreation facilities, do not adversely affect environmentally and culturally sensitive areas, such as at-risk species breeding habitat or at-risk plant species habitat.	Guideline (REC-FW-GDL) 01 When locating new recreation facilities or upgrading existing facilities, do not affect environmentally and culturally sensitive areas.	Guideline (REC-FW-GDL) 01 Same as Alternative B.
Guideline (REC-FW-GDL) 02 Create infrastructure that mimics the natural textures and colors of the surrounding landscape to be consistent with the recreation setting.	Guideline (REC-FW-GDL) 02 Same as Alternative B.	Guideline (REC-FW-GDL) 02 Same as Alternative B.
Guideline (REC-FW-GDL) 03 Use integrated resource planning when designing projects to address impacts to culturally sensitive areas and at-risk species habitat, and to address changing conditions in recreation settings.	Guideline (REC-FW-GDL) 03 Same as Alternative B.	Guideline (REC-FW-GDL) 03 Same as Alternative B.

Table A-23. Scenic Integrity

Alternative B	Alternative C and E	Alternative D
SCENICE INTEGRITY – Forestwide – Desired Conditions		
Desired Condition (SCEN-FW-DC) 01 The national forest provides a variety of ecologically sound, resilient, and visually appealing forest landscapes that sustain scenic character, supporting the forest recreation program niche in ways that contribute to visitors' sense of place and connection with nature.	Desired Condition (SCEN-FW-DC) 01 Same as Alternative B.	Desired Condition (SCEN-FW-DC) 01 Same as Alternative B.
Desired Condition (SCEN-FW-DC) 02 Scenic character is maintained and/or adapted to changing conditions to support ecological, social, and economic sustainability on the national forest and in surrounding communities.	Desired Condition (SCEN-FW-DC) 02 Same as Alternative B.	Desired Condition (SCEN-FW-DC) 02 Same as Alternative B.
Desired Condition (SCEN-FW-DC) 03 Scenic integrity is maintained in places people visit for high quality viewing experiences.	Desired Condition (SCEN-FW-DC) 03 Same as Alternative B.	Desired Condition (SCEN-FW-DC) 03 Same as Alternative B.
Desired Condition SNF (SCEN-FW-DC) 04 Scenic resources complement the recreation settings and experiences, as described by the range of scenery integrity objectives, while reflecting healthy and sustainable ecosystem conditions.	Desired Condition SNF (SCEN-FW-DC) 04 Same as Alternative B.	Desired Condition SNF (SCEN-FW-DC) 04 Same as Alternative B.
Desired Condition SQF (SCEN-FW-DC) 04 The Sequoia National Forest's scenic resources meet or are moving toward desired scenic integrity objectives complementing the recreation settings as described by the range of scenery integrity objectives, and reflect healthy and sustainable ecosystem conditions.	Desired Condition SQF (SCEN-FW-DC) 04 Same as Alternative B.	Desired Condition SQF (SCEN-FW-DC) 04 Same as Alternative B.
Desired Condition (SCEN-FW-DC) 05 The built environment meets or exceeds scenic integrity objectives and contributes to scenic stability.	Desired Condition (SCEN-FW-DC) 05 Same as Alternative B.	Desired Condition (SCEN-FW-DC) 05 Same as Alternative B.
Desired Condition (SCEN-FW-DC) 06 Scenery stability is enhanced through integrated fuels and forest health projects.	Desired Condition (SCEN-FW-DC) 06 Same as Alternative B.	Desired Condition (SCEN-FW-DC) 06 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
SCENICE INTEGRITY – Forestwide – Goals		
Goal (SCEN-FW-GOAL) 01 The Forest Service works with other agencies and adjacent landowners to maintain shared vistas.	Goal (SCEN-FW-GOAL) 01 Same as Alternative B.	Goal (SCEN-FW-GOAL) 01 Same as Alternative B.
SCENICE INTEGRITY – Forestwide – Guidelines		
Guideline (SCEN-FW-GDL) 01 Management activities should maintain or move toward scenic integrity objectives in the long-term timeframes.	Guideline (SCEN-FW-GDL) 01 Same as Alternative B.	Guideline (SCEN-FW-GDL) 01 Same as Alternative B.
Guideline (SCEN-FW-GDL) 02 In order to meet scenic integrity objectives, consider improving scenery resources during vegetation treatment and fuels reduction projects.	Guideline (SCEN-FW-GDL) 02 Same as Alternative B.	Guideline (SCEN-FW-GDL) 02 Same as Alternative B.
Guideline (SCEN-FW-GDL) 03 When practical, design management activities to meet and exceed the specified scenic integrity objective.	Guideline (SCEN-FW-GDL) 03 Same as Alternative B.	Guideline (SCEN-FW-GDL) 03 Same as Alternative B.

Table A-24. Management Area- Sustainable Recreation

Alternative B	Alternative C	Alternative D	Alternative E
MANAGEMENT AREA – Destination Recreation Area – Desired Conditions			
Desired Condition (MA-DRA-DC) 01 Facilities are modern, in good repair, protect natural resources from damage while providing for visitor comfort and convenience. The developed area footprint within destination recreation areas is visually appealing and well maintained.	Desired Condition (MA-DRA-DC) 01 Same as Alternative B.	Desired Condition (MA-DRA-DC) 01 Same as Alternative B.	N/A
Desired Condition (MA-DRA-DC) 02 A natural-appearing landscape is retained outside the development footprint.	Desired Condition (MA-DRA-DC) 02 Same as Alternative B.	Desired Condition (MA-DRA-DC) 02 Same as Alternative B.	N/A
Desired Condition (MA-DRA-DC) 03 Developed sites meet national quality standards.	Desired Condition (MA-DRA-DC) 03 Same as Alternative B.	Desired Condition (MA-DRA-DC) 03 Same as Alternative B.	N/A

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
Desired Condition (MA-DRA-DC) 04 National Forest System roads and trails provide visitors easy access to destinations.	Desired Condition (MA-DRA-DC) 04 Same as Alternative B.	Desired Condition (MA-DRA-DC) 04 Same as Alternative B.	N/A
Desired Condition (MA-DRA-DC) 05 The setting provides amenities and sustainable infrastructure to support a variety of recreational activities in close proximity to each other.	Desired Condition (MA-DRA-DC) 05 Same as Alternative B.	Desired Condition (MA-DRA-DC) 05 Same as Alternative B.	N/A
Desired Condition (MA-DRA-DC) 06 Available infrastructure and amenities are consistent with user capacity.	Desired Condition (MA-DRA-DC) 06 Same as Alternative B.	Desired Condition (MA-DRA-DC) 06 Same as Alternative B.	N/A
Desired Condition (MA-DRA-DC) 07 Interpretation and education activities inform visitors about the natural and cultural environment and responsible visitor behavior.	Desired Condition (MA-DRA-DC) 07 Same as Alternative B.	Desired Condition (MA-DRA-DC) 07 Same as Alternative B.	N/A
Desired Condition (MA-DRA-DC) 08 Traffic and parking does not negatively impact visitor experience.	Desired Condition (MA-DRA-DC) 08 Same as Alternative B.	Desired Condition (MA-DRA-DC) 08 Same as Alternative B.	N/A
MANAGEMENT AREA – General Recreation Area – <i>Desired Conditions</i>			
Desired Condition (MA-GRA-DC) 01 In this management area there are limited amenities, few signs and minor developments.	Desired Condition (MA-GRA-DC) 01 Same as Alternative B.	Desired Condition (MA-GRA-DC) 01 Same as Alternative B.	Desired Condition (MA-GRA-DC) 01 Same as Alternative B.
Desired Condition (MA-GRA-DC) 02 Scenic integrity is generally moderate to high. Where developed facilities are present, they are aesthetically incorporated into the landscape. Scenic integrity is maintained at or enhanced from current conditions	Desired Condition (MA-GRA-DC) 02 Same as Alternative B.	Desired Condition (MA-GRA-DC) 02 Same as Alternative B.	Desired Condition (MA-GRA-DC) 02 Same as Alternative B.
Desired Condition (MA-GRA-DC) 03 Recreation use is compatible with other resource management values.	Desired Condition (MA-GRA-DC) 03 Same as Alternative B.	Desired Condition (MA-GRA-DC) 03 Same as Alternative B.	Desired Condition (MA-GRA-DC) 03 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
Desired Condition (MA-GRA-DC) 04 Developed recreation sites provide opportunities on the more roaded natural, and semi-primitive motorized areas.	Desired Condition (MA-GRA-DC) 04 Same as Alternative B.	Desired Condition (MA-GRA-DC) 04 Same as Alternative B.	Desired Condition (MA-GRA-DC) 04 Same as Alternative B.
Desired Condition (MA-GRA-DC) 05 A mosaic of vegetation conditions is often present, with most areas appearing predominantly natural.	Desired Condition (MA-GRA-DC) 05 Same as Alternative B.	Desired Condition (MA-GRA-DC) 05 Same as Alternative B.	Desired Condition (MA-GRA-DC) 05 Same as Alternative B.
Desired Condition (MA-GRA-DC) 06 Conflicts between different uses are infrequent.	Desired Condition (MA-GRA-DC) 06 Same as Alternative B.	Desired Condition (MA-GRA-DC) 06 Same as Alternative B.	Desired Condition (MA-GRA-DC) 06 Same as Alternative B.
Desired Condition (MA-GRA-DC) 07 As new forms of recreation activities emerge; recreation settings retain their natural character.	Desired Condition (MA-GRA-DC) 07 Same as Alternative B.	Desired Condition (MA-GRA-DC) 07 Same as Alternative B.	Desired Condition (MA-GRA-DC) 07 Same as Alternative B.
Desired Condition SQF (MA-GRA-DC) 08 The road and trail system supports dispersed recreation activities in a variety of settings, providing satisfying experiences with few visitor conflicts, and connecting people with nature.	Desired Condition SQF (MA-GRA-DC) 08 Same as Alternative B.	Desired Condition SQF (MA-GRA-DC) 08 Same as Alternative B.	Desired Condition SQF (MA-GRA-DC) 08 Same as Alternative B.
MANAGEMENT AREA – General Recreation Area – Objectives			
Objective SQF (MA-GRA-OBJ) 01 Within 15 years of plan approval institute a sustainable, dispersed recreation program that relies on visitor self-sufficiency and responsible recreation use, in areas outside of developed sites.	Objective SQF (MA-GRA-OBJ) 01 Same as Alternative B.	Objective SQF (MA-GRA-OBJ) 01 Same as Alternative B.	Objective SQF (MA-GRA-OBJ) 01 Same as Alternative B.
Objective SNF (MA-GRA-OBJ) 01 Within 15 years of plan approval institute a sustainable, dispersed recreation program.	Objective SNF (MA-GRA-OBJ) 01 Same as Alternative B.	Objective SNF (MA-GRA-OBJ) 01 Same as Alternative B.	Objective SNF (MA-GRA-OBJ) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
Objective SQF (MA-GRA-OBJ) 02 Within 15 years of the plan approval, manage soil compaction and loss of riparian vegetation in 5 undeveloped camping sites that are located within 150 feet of a waterbody.	Objective SQF (MA-GRA-OBJ) 02 Same as Alternative B.	Objective SQF (MA-GRA-OBJ) 02 Same as Alternative B.	Objective SQF (MA-GRA-OBJ) 02 Same as Alternative B.
MANAGEMENT AREA – General Recreation Area – Goals			
Goal (MA-GRA-GOAL) 01 Provide effective visitor information and programs to inform visitors of appropriate behaviors and stewardship responsibilities.	Goal (MA-GRA-GOAL) 01 Same as Alternative B.	Goal (MA-GRA-GOAL) 01 Same as Alternative B.	Goal (MA-GRA-GOAL) 01 Same as Alternative B.
Goal (MA-GRA-GOAL) 02 Highlight quality recreational experiences so visitors are aware of the recreational opportunities in this area.	Goal (MA-GRA-GOAL) 02 Same as Alternative B.	Goal (MA-GRA-GOAL) 02 Same as Alternative B.	Goal (MA-GRA-GOAL) 02 Same as Alternative B.
MANAGEMENT AREA – General Recreation Area – Guidelines			
Guideline (MA-GRA-GDL) 01 Use direct management techniques to reduce impacts on resources.	Guideline (MA-GRA-GDL) 01 Use direct management techniques to reduce impacts from recreation on resources.	Guideline (MA-GRA-GDL) 01 Same as Alternative B.	Guideline (MA-GRA-GDL) 01 Same as Alternative C.
MANAGEMENT AREA – Challenging Backroad Recreation Area – Desired Conditions			
Desired Condition (MA-CBRA-DC) 01 These landscapes provide opportunities for challenging and remote recreation experiences.	Desired Condition (MA-CBRA-DC) 01 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 01 Same as Alternative B.	N/A
Desired Condition (MA-CBRA-DC) 02 These areas contribute to ecosystem and species diversity and sustainability, serve as habitat for fauna and flora, and offer wildlife corridors. These areas provide a diversity of terrestrial and aquatic habitats, and support species dependent on large, undisturbed areas of land.	Desired Condition (MA-CBRA-DC) 02 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 02 Same as Alternative B.	N/A
Desired Condition (MA-CBRA-DC) 03 Management that supports recreation activities is minimal.	Desired Condition (MA-CBRA-DC) 03 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 03 Same as Alternative B.	N/A

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
Desired Condition (MA-CBRA-DC) 04 There is a low density of infrastructure and designated roads and trails.	Desired Condition (MA-CBRA-DC) 04 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 04 Same as Alternative B.	N/A
Desired Condition (MA-CBRA-DC) 05 Conflicts between different recreation uses are infrequent.	Desired Condition (MA-CBRA-DC) 05 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 05 Same as Alternative B.	N/A
Desired Condition (MA-CBRA-DC) 06 There are vast areas for nonmotorized cross-country travel offering visitors opportunities for exploration and challenge.	Desired Condition (MA-CBRA-DC) 06 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 06 Same as Alternative B.	N/A
Desired Condition (MA-CBRA-DC) 07 There is little evidence of cross-country travel.	Desired Condition (MA-CBRA-DC) 07 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 07 Same as Alternative B.	N/A
Desired Condition (MA-CBRA-DC) 08 As new forms of recreation emerge, recreation settings retain their natural character.	Desired Condition (MA-CBRA-DC) 08 Same as Alternative B.	Desired Condition (MA-CBRA-DC) 08 Same as Alternative B.	N/A
MANAGEMENT AREA – Challenging Backroad Recreation Area –Standards			
Standard (MA-CBRA-STD) 01 Authorize new lands special use permits only where it is appropriate to the remote setting.	Standard (MA-CBRA-STD) 01 Prohibit new lands special use permits to maintain the remote setting.	Standard (MA-CBRA-STD) 01 Same as Alternative B.	Standard (MA-CBRA-STD) 01 Same as Alternative C.
Standard (MA-CBRA-STD) 02 Recreation special use permits must be consistent with low visitor use and the remote setting.	Standard (MA-CBRA-STD) 02 Same as Alternative B.	Standard (MA-CBRA-STD) 02 Same as Alternative B.	Standard (MA-CBRA-STD) 02 Same as Alternative B.
Standard (MA-CBRA-STD) 03 Any new recreation development must be the minimum necessary to accommodate the activity and protect natural resources.	Standard (MA-CBRA-STD) 03 Same as Alternative B.	Standard (MA-CBRA-STD) 03 Same as Alternative B.	Standard (MA-CBRA-STD) 03 Same as Alternative B.

Table A-25. Designated Area- National Recreation Trails

Alternative B	Alternative C and E	Alternative D
DESIGNATED AREA – National Recreation Trails – <i>Desired Conditions</i>		
Desired Condition (DA-NRT-DC) 01 National recreation trails meet the intended goals and preserve the values and recreation opportunities for which they were established.	Desired Condition (DA-NRT-DC) 01 Same as Alternative B.	Desired Condition (DA-NRT-DC) 01 Same as Alternative B.
Desired Condition (DA-NRT-DC) 02 The trail setting provides a variety of opportunities that complement the existing recreation opportunity spectrum class where the trail segment is located.	Desired Condition (DA-NRT-DC) 02 Same as Alternative B.	Desired Condition (DA-NRT-DC) 02 Same as Alternative B.
Desired Condition (DA-NRT-DC) 03 Foreground views from the trail meet a scenic integrity objective at least as high as shown on the minimum scenic integrity map. Middle and background views meet or exceed a scenic integrity objective of at least moderate.	Desired Condition (DA-NRT-DC) 03 Same as Alternative B.	Desired Condition (DA-NRT-DC) 03 Same as Alternative B.
Desired Condition (DA-NRT-DC) 04 National recreation trails meet trail management objectives and the maintenance standards for trail class and managed use.	Desired Condition (DA-NRT-DC) 04 Same as Alternative B.	Desired Condition (DA-NRT-DC) 04 Same as Alternative B.
DESIGNATED AREA – National Recreation Trails – <i>Guidelines</i>		
Guideline (DA-NRT-GDL) 01 During management activities, maintain safe public access to national recreation trails if practicable.	Guideline (DA-NRT-GDL) 01 Same as Alternative B.	Guideline (DA-NRT-GDL) 01 Same as Alternative B.

Table A-26. Designated Area- Research Natural Areas

Alternative B	Alternative C and E	Alternative D
DESIGNATED AREA – Research Natural Area – <i>Suitability</i>		
Suitability (DA-RNA-SUIT) 01 The following uses are not suitable in research natural areas: <ul style="list-style-type: none"> • Timber production • Other forest product gathering that impact natural ecological processes or are inconsistent with the objectives for which the research natural area was established 	Suitability (DA-RNA-SUIT) 01 Same as Alternative B.	Suitability (DA-RNA-SUIT) 01 Same as Alternative B.

Table A-27. Designated Wilderness

Revisions to Alternative B	Alternative C and E	Alternative D
DESIGNATED AREA – Designated Wilderness – <i>Desired Conditions</i>		
Desired Conditions (DA-WILD-DC) 01 The wilderness character of each wilderness, including the qualities of untrammeled, natural, undeveloped, opportunities for solitude or primitive recreation, and other features of value (such as ecological, geological, or other features of scientific, educational, scenic, cultural or historical value specific to each wilderness area) are preserved and, when possible, enhanced.	Desired Conditions (DA-WILD-DC) 01 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 01 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 02 Watersheds are functioning properly and exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural and current potential condition.	Desired Conditions (DA-WILD-DC) 02 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 02 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 03 Fire is restored as an ecosystem process and natural disturbance agent in wilderness where possible.	Desired Conditions (DA-WILD-DC) 03 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 03 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 04 Each wilderness area accommodates levels of recreation use that are ecologically sustainable.	Desired Conditions (DA-WILD-DC) 04 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 04 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 05 Overall recreation use is maintained at a level that protects opportunities for solitude and wilderness character.	Desired Conditions (DA-WILD-DC) 05 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 05 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 06 Forest visitors find opportunities for primitive recreation and solitude across the wilderness.	Desired Conditions (DA-WILD-DC) 06 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 06 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 07 National Forest System trails that access wilderness are part of a high-quality wilderness experience for visitors. National Forest System trails meet national quality standards, with minimal deferred maintenance and adhere to the national trail classification system. Trails in wilderness are located in resilient areas, and do not cause adverse impacts to at-risk species, water quality, soils, hydrologic connectivity, or cultural resources.	Desired Conditions (DA-WILD-DC) 07 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 07 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Revisions to Alternative B	Alternative C and E	Alternative D
Desired Conditions (DA-WILD-DC) 08 Concentrated use and associated resource impacts are directed to more resilient parts of the landscape when possible, and prevented from expanding in fragile areas.	Desired Conditions (DA-WILD-DC) 08 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 08 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 09 Resource impacts of user-created trails are reduced.	Desired Conditions (DA-WILD-DC) 09 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 09 Same as Alternative B.
Desired Conditions (DA-WILD-DC) 10 If a wilderness permit system is in place, the permit system provides equity in access for all authorized and legitimate uses.	Desired Conditions (DA-WILD-DC) 10 Same as Alternative B.	Desired Conditions (DA-WILD-DC) 10 Same as Alternative B.
DESIGNATED AREA – Designated Wilderness – Goals		
Goal (DA-WILD-GOAL) 01 Restore to natural conditions campsites that adversely affect water quality.	Goal (DA-WILD-GOAL) 01 Same as Alternative B.	Goal (DA-WILD-GOAL) 01 Same as Alternative B.
DESIGNATED AREA – Designated Wilderness – Guidelines		
Guideline (DA-WILD-GDL) 01 Limit party size and number of stock per party to a level that protects social and natural resource values. The level may vary within or between wilderness areas.	Guideline (DA-WILD-GDL) 01 Same as Alternative B.	Guideline (DA-WILD-GDL) 01 Same as Alternative B.
DESIGNATED AREA – Designated Wilderness – Suitability		
Suitability (DA-WILD-SUIT) 01 Except as specifically provided for in the Wilderness Act, and subject to valid existing rights the following uses are not suitable within designated wilderness. <ul style="list-style-type: none"> • commercial enterprise; • temporary roads; • use of motor vehicles, motorized equipment or motorboats; • landing of aircraft; • mechanical transport; and • structures or installations. 	Suitability (DA-WILD-SUIT) 01 Same as Alternative B.	Suitability (DA-WILD-SUIT) 01 Same as Alternative B.

Table A-28. Designated Area-Wilderness Recreation

Alternative B	Alternative C and E	Alternative D
DESIGNATED AREA – Ansel Adams, John Muir, Dinkey Lakes and Kaiser³ Wilderness – Recreation Category 1 – <i>Desired Conditions</i>		
Desired Conditions (DA-WILD-REC1-DC) 01 Opportunities for solitude are highest among the recreation categories. Evidence of human activities is predominantly absent. Encounters with other visitors while traveling or camping are very infrequent. This environment offers the highest degree of challenge, self-reliance and risk.	Desired Conditions (DA-WILD-REC1-DC) 01 Same as Alternative B.	Desired Conditions (DA-WILD-REC1-DC) 01 Same as Alternative B.
Desired Conditions (DA-WILD-REC1-DC) 02 An unmodified natural environment characterizes the area. Ecological and natural processes are minimally affected by the action of users. Environmental impacts are low and restricted to minor losses of vegetation where camping occurs and along travel routes. Most impacts recover on an annual basis and are apparent to few visitors.	Desired Conditions (DA-WILD-REC1-DC) 02 Same as Alternative B.	Desired Conditions (DA-WILD-REC1-DC) 02 Same as Alternative B.
Desired Conditions (DA-WILD-REC1-DC) 03 Campsites are at low-density levels and show minor impacts that will rarely persist year to year.	Desired Conditions (DA-WILD-REC1-DC) 03 Same as Alternative B.	Desired Conditions (DA-WILD-REC1-DC) 03 Same as Alternative B.
Desired Conditions (DA-WILD-REC1-DC) 04 There is very little vegetation loss or alteration of duff and litter layer by human use.	Desired Conditions (DA-WILD-REC1-DC) 04 Same as Alternative B.	Desired Conditions (DA-WILD-REC1-DC) 04 Same as Alternative B.
Desired Conditions (DA-WILD-REC1-DC) 05 Riparian, lakeshore, and stream channel conditions show no measurable degradation due to human uses.	Desired Conditions (DA-WILD-REC1-DC) 05 Same as Alternative B.	Desired Conditions (DA-WILD-REC1-DC) 05 Same as Alternative B.
DESIGNATED AREA – Ansel Adams, John Muir, Dinkey Lakes and Kaiser Wilderness⁴ – Recreation Category 2 - <i>Desired Conditions</i>		
Desired Conditions (DA-WILD-REC2-DC) 01 High occasions of solitude are experienced while traveling or camping outside the primary trail corridors. Along primary trail corridors, encounters with other visitors while traveling or camping is higher than Category 1 areas but far less than Category 3 areas. This environment offers a high degree of challenge, self-reliance, and risk.	Desired Conditions (DA-WILD-REC2-DC) 01 Same as Alternative B.	Desired Conditions (DA-WILD-REC2-DC) 01 Same as Alternative B.

³ Kaiser Wilderness would not have Recreation zones in Alternative D; Forest-wide Wilderness Desired Conditions would apply for Kaiser Wilderness.

⁴ Kaiser Wilderness would not have Recreation zones in Alternative D; Forest-wide Wilderness Desired Conditions would apply for Kaiser Wilderness.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Conditions (DA-WILD-REC2-DC) 02 A highly unmodified natural environment characterizes the area. In the few concentrated areas of moderate use, natural conditions may be more affected by the actions of users. A higher level of management is present to mitigate these impacts. Impacts may persist from year to year and may be apparent to some visitors. Most visitors will not discern impacts.	Desired Conditions (DA-WILD-REC2-DC) 02 Same as Alternative B.	Desired Conditions (DA-WILD-REC2-DC) 02 Same as Alternative B.
Desired Conditions (DA-WILD-REC2-DC) 03 Concentration of campsites exists at trail junctions and popular destination points. No new sites are forming over time. Campsites may occasionally be within sight and sound of others. Bare mineral soil may exist on some sites and may persist from year to year. Outside these areas, campsites and impacts associated with camping is light.	Desired Conditions (DA-WILD-REC2-DC) 03 Same as Alternative B.	Desired Conditions (DA-WILD-REC2-DC) 03 Same as Alternative B.
Desired Conditions (DA-WILD-REC2-DC) 04 Moderate soil compaction and loss of vegetation occurs. Minimal erosion occurs on disturbed sites.	Desired Conditions (DA-WILD-REC2-DC) 04 Same as Alternative B.	Desired Conditions (DA-WILD-REC2-DC) 04 Same as Alternative B.
Desired Conditions (DA-WILD-REC2-DC) 05 Riparian, lakeshore and stream channel conditions show a temporary change within standards, which could persist from year to year at a few sites. Impacts are mitigated and prevented to reduce long-term impacts.	Desired Conditions (DA-WILD-REC2-DC) 05 Same as Alternative B.	Desired Conditions (DA-WILD-REC2-DC) 05 Same as Alternative B.
DESIGNATED AREA – Ansel Adams, John Muir, Dinkey Lakes and Kaiser⁵ Wilderness – Recreation Category 3 - <i>Desired Conditions</i>		
Desired Conditions (DA-WILD-REC3-DC) 01 Recreation use levels provide fewer opportunities for solitude than the other two categories, yet high opportunities for solitude exist during the non-peak use season. During peak use season, opportunities for experiencing isolation from the sights, sounds, and impacts of human activities is less than other categories. The probability of encountering other visitors on the trail and at campsites is more than other areas.	Desired Conditions (DA-WILD-REC3-DC) 01 Same as Alternative B.	Desired Conditions (DA-WILD-REC3-DC) 01 Same as Alternative B.

⁵ Kaiser Wilderness would not have Recreation zones in Alternative D; Forest-wide Wilderness Desired Conditions would apply for Kaiser Wilderness.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Conditions (DA-WILD-REC3-DC) 02 A A highly unmodified natural environment characterizes the area. In the few concentrated areas of moderate use, natural conditions may be more affected by the actions of users. A higher level of management is present to mitigate these impacts. Impacts may persist from year to year and may be apparent to some visitors. Most visitors will not discern impacts.	Desired Conditions (DA-WILD-REC3-DC) 02 Same as Alternative B.	Desired Conditions (DA-WILD-REC3-DC) 02 Same as Alternative B.
Desired Conditions (DA-WILD-REC3-DC) 03 Concentration of campsites is moderately high at destinations and along travel corridors. The number of sites accommodates peak use to prevent the formation of new sites. Bare mineral soil may exist on some sites and may persist from year to year.	Desired Conditions (DA-WILD-REC3-DC) 03 Same as Alternative B.	Desired Conditions (DA-WILD-REC3-DC) 03 Same as Alternative B.
Desired Conditions (DA-WILD-REC3-DC) 04 Moderate soil compaction and loss of vegetation, litter, and duff occurs on many visitor created trails, in camp areas, and in areas used by livestock. Minimal erosion occurs on disturbed sites and is mitigated to prevent long-term impacts.	Desired Conditions (DA-WILD-REC3-DC) 04 Same as Alternative B.	Desired Conditions (DA-WILD-REC3-DC) 04 Same as Alternative B.
Desired Conditions (DA-WILD-REC3-DC) 05 Riparian, lakeshore, and stream channel conditions show temporary changes within standards, which could persist from year to year at some sites. Mitigation measures accommodate moderate levels of human recreation impacts.	Desired Conditions (DA-WILD-REC3-DC) 05 Same as Alternative B.	Desired Conditions (DA-WILD-REC3-DC) 05 Same as Alternative B.
DESIGNATED AREA – Golden Trout Wilderness and Domeland Wilderness		
Use Existing Management Plan	Use Existing Management Plan	Use Existing Management Plan
DESIGNATED AREA – South Sierra Wilderness – Opportunity Class 1 - <i>Desired Conditions</i>		
Desired Conditions (DA-WILD-OC1-DC) 01 Opportunities for solitude and isolation are high. There is little evidence of human activities. Encounters with other users are infrequent. Contact with other parties is rare to non-existent while traveling and are very low at campsites. Many opportunities for cross-country travel exist. This environment offers a high degree of challenge, self-reliance and risk.	Desired Conditions (DA-WILD-OC1-DC) 01 Same as Alternative B.	Desired Conditions (DA-WILD-OC1-DC) 01 Same as Alternative B.

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Alternative B	Alternative C and E	Alternative D
Desired Conditions (DA-WILD-OC1-DC) 02 A highly unmodified natural environment generally characterizes the area. Ecological processes are largely unaffected by direct human actions. Environmental impacts are minimal and are usually restricted to areas along travel corridors. Most impacts recover on an annual basis and are not apparent to most visitors.	Desired Conditions (DA-WILD-OC1-DC) 02 Same as Alternative B.	Desired Conditions (DA-WILD-OC1-DC) 02 Same as Alternative B.
DESIGNATED AREA – South Sierra Wilderness – Opportunity Class 2 - <i>Desired Conditions</i>		
Desired Conditions (DA-WILD-OC2-DC) 01 Many opportunities for exploration and isolation exist. There is some evidence of human activities, and the probability of encountering other users is low on trails, but other parties may be encountered at campsites. This environment offers a high degree of challenge, self-reliance, and risk.	Desired Conditions (DA-WILD-OC2-DC) 01 Same as Alternative B.	Desired Conditions (DA-WILD-OC2-DC) 01 Same as Alternative B.
Desired Conditions (DA-WILD-OC2-DC) 02 An unmodified natural environment generally characterizes the area, except within trail corridors (50 feet on each side of a trail). Ecological processes are minimally affected by direct human actions. Environmental impacts are low and usually restricted to areas along travel routes and near campsites. Many impacts recover on an annual basis and are not apparent to most visitors.	Desired Conditions (DA-WILD-OC2-DC) 02 Same as Alternative B.	Desired Conditions (DA-WILD-OC2-DC) 02 Same as Alternative B.

Table A-29. Management Area – Recommended Wilderness

Alternative B	Alternative C	Alternative D	Alternative E
MANAGEMENT AREA – Recommended Wilderness- <i>Desired Conditions</i>			
Desired Conditions SQF (MA-RWLD-DC) 01 Areas recommended for wilderness retain their wilderness characteristics until their designation as wilderness or other use determined by Congress.	Desired Conditions (MA-RWLD-DC) 01 Areas recommended for wilderness retain their wilderness characteristics until their designation as wilderness or other use determined by Congress.	N/A	Desired Condition (MA-RWLD-DC) 01 Same as Alternative C.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
Desired Conditions SQF (MA-RWLD-DC) 02 Recommended wilderness areas are valued by the public for the ecosystem services they provide, including contributing to clean air and water, conserving wildlife habitat, providing opportunities for solitude or primitive unconfined recreation, and other wilderness characteristics.	Desired Conditions (MA-RWLD-DC) 02 Recommended wilderness areas are valued by the public for the ecosystem services they provide, including contributing to clean air and water, conserving wildlife habitat, providing opportunities for solitude or primitive unconfined recreation, and other wilderness characteristics.	N/A	Desired Condition (MA-RWLD-DC) 02 Same as Alternative C.
MANAGEMENT AREA – Recommended Wilderness – Suitability			
Suitability SQF (MA-RWLD-SUIT) 01 Recommended wilderness areas are not suitable for road construction or reconstruction.	Suitability (MA-RWLD-SUIT) 01 Recommended wilderness areas are not suitable for road construction or reconstruction.	N/A	Suitability (MA-RWLD-SUIT) 01 Same as Alternative C.
Suitability SQF (MA-RWLD-SUIT) 02 Recommended wilderness areas are not suitable for timber production.	Suitability (MA-RWLD-SUIT) 02 Recommended wilderness areas are not suitable for timber production.	N/A	Suitability (MA-RWLD-SUIT) 02 Same as Alternative C.
Suitability SQF (MA-RWLD-SUIT) 03 New energy developments or leases shall not be permitted.	Suitability (MA-RWLD-SUIT) 03 New energy developments or leases shall not be permitted.	N/A	Suitability (MA-RWLD-SUIT) 03 Same as Alternative C.
Suitability SQF (MA-RWLD-SUIT) 04 Recommended wilderness areas are not suitable for removal of salable mineral material (includes sand, stone, gravel, cinders, clay, pumice, and pumicite).	Suitability (MA-RWLD-SUIT) 04 Recommended wilderness areas are not suitable for removal of salable mineral material (includes sand, stone, gravel, cinders, clay, pumice, and pumicite).	N/A	Suitability (MA-RWLD-SUIT) 04 Same as Alternative C.
Suitability SQF (MA-RWLD-SUIT) 05 Grazing within recommended wilderness areas is suitable.	Suitability (MA-RWLD-SUIT) 05 Same as Alternative B.	N/A	Suitability (MA-RWLD-SUIT) 05 Same as Alternative B.
Suitability SQF (MA-RWLD-SUIT) 06 Mechanized transport and motorized use are not suitable in recommended wilderness areas; motorized travel and uses shall not be allowed unless specifically authorized for administrative use.	Suitability (MA-RWLD-SUIT) 06 Same as Alternative B.	N/A	Suitability (MA-RWLD-SUIT) 06 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
Suitability SQF (MA-RWLD-SUIT) 07 Non-conforming projects or activities may be suitable if they are temporary in nature and are for purposes of ecological restoration for at-risk species habitat or for administrative purposes, and do not have lasting effects on the wilderness characteristics. Forest Supervisors must approve such temporary projects or activities.	Suitability (MA-RWLD-SUIT) 07 Non-conforming projects or activities may be suitable if they are temporary in nature and are for purposes of ecological restoration for at-risk species habitat or for administrative purposes, and do not have lasting effects on the wilderness characteristics. Forest Supervisors must approve such temporary projects or activities.	N/A	Suitability (MA-RWLD-SUIT) 07 Same as Alternative C.

Table A-30. Management Area- Backcountry Management Area

Alternative B	Alternative C	Alternative D	Alternative E
MANAGEMENT AREA – Backcountry Management Area – Desired Conditions			
N/A	N/A	N/A	Desired Condition (MA-BMA-DC) 01 Backcountry Management Areas conserve roadless characteristics while allowing for recreation activities consistent with the land. This includes mechanized and motorized transport on the existing road and trail system.
N/A	N/A	N/A	Desired Condition (MA-BMA-DC) 02 There is a low level of infrastructure and development needed to support the recreational activities occurring in the area.
N/A	N/A	N/A	Desired Condition (MA-BMA-DC) 03 Managed and prescribe fire occurs to the extent possible to restore fire to the ecosystem.
N/A	N/A	N/A	Desired Condition (MA-BMA-DC) 04 Management activities such as habitat restoration, and restoration activities such as road decommissioning take place to conserve the character of the area.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
MANAGEMENT AREA – Backcountry Management Area – Standards			
N/A	N/A	N/A	Standard (MA-BMA-STD) 01 No new road construction or reconstruction will occur except for minor reroutes to prevent irreparable resource damage or improve safety. (Repair of existing roads is allowed).
N/A	N/A	N/A	Standard (MA-BMA-STD) 02 No new off-highway vehicle or over-snow vehicle route construction or reconstruction, except for minor reroutes to prevent irreparable resource damage or improve safety.
N/A	N/A	N/A	Standard (MA-BMA-STD) 03 Forest management will not occur for purposes other than for improving threatened, endangered, proposed or species of conservation concern habitat, or maintaining or restoring characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period. This may include removal and sale of generally small diameter material for the purposes described above, as well as felling of hazard trees. Management of existing plantations is allowed. Forest vegetation management activities will generally be infrequent and are allowed only if they maintain or improve the roadless area characteristics of the Backcountry Management Area.
MANAGEMENT AREA – Backcountry Management Area – Guidelines			
N/A	N/A	N/A	Guideline (MA-BMA-GDL) 01 Maintain designated motor vehicle use map routes.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C	Alternative D	Alternative E
N/A	N/A	N/A	Guideline (MA-BMA-GDL) 02 Construction of new nonmotorized trails will be consistent with the undeveloped characteristics of the area.
N/A	N/A	N/A	Guideline (MA-BMA-GDL) 03 At-risk plant or wildlife species habitat restoration activities will be carried out to maintain and retain the conservation values of the area.
MANAGEMENT AREA – Backcountry Management Area – Suitability			
N/A	N/A	N/A	Suitability (MA-BMA-SUIT) 01 Mining on existing valid claims is suitable.
N/A	N/A	N/A	Suitability (MA-BMA-SUIT) 02 Commercial livestock grazing is suitable.
N/A	N/A	N/A	Suitability (MA-BMA-SUIT) 03 Backcountry Management Areas are not suitable for timber production, although timber harvest may occur as described in standard MA-BMA-STD-03. Backcountry Management Areas are suitable for the collection of firewood and other nontimber forest products.

Table A-31. Management Area- Pacific Crest Trail

Alternative B	Alternative C and E	Alternative D
MANAGEMENT AREA – Pacific Crest Trail in Designated Wilderness – Desired Conditions		
Desired Condition (MA-PCTW-DC) 01 The Pacific Crest National Scenic Trail provides for outstanding journeys on foot or on horseback along the Pacific mountain ranges. Tranquility and closeness with nature can be found consistently along the trail, evoking a feeling of extended retreat from civilization, even if only venturing out for a day.	Desired Condition (MA-PCTW-DC) 01 Same as Alternative B.	Desired Condition (MA-PCTW-DC) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Condition (MA-PCTW-DC) 02 The recreation setting is consistent with or complements the primitive recreation opportunity spectrum.	Desired Condition (MA-PCTW-DC) 02 Same as Alternative B.	Desired Condition (MA-PCTW-DC) 02 Same as Alternative B.
Desired Condition (MA-PCTW-DC) 03 Outstanding panoramic views of natural landscapes in a tranquil scenic environment are provided when possible.	Desired Condition (MA-PCTW-DC) 03 Same as Alternative B.	Desired Condition (MA-PCTW-DC) 03 Same as Alternative B.
Desired Condition (MA-PCTW-DC) 04 Scenic integrity objectives and scenic stability levels are maintained to retain panoramic views and landscape connectivity. Lands viewed beyond the management area meet the scenery integrity objective of at least moderate.	Desired Condition (MA-PCTW-DC) 04 Same as Alternative B.	Desired Condition (MA-PCTW-DC) 04 Same as Alternative B.
MANAGEMENT AREA – Pacific Crest Trail in Designated Wilderness – <i>Standards</i>		
Standard (MA-PCTW-STD) 01 Prohibit heavy equipment line construction on the Pacific Crest National Scenic Trail, unless necessary for emergency protection of property and safety.	Standard (MA-PCTW-STD) 01 Same as Alternative B.	Standard (MA-PCTW-STD) 01 Same as Alternative B.
MANAGEMENT AREA – Pacific Crest Trail in Designated Wilderness – <i>Guidelines</i>		
Guideline (MA-PCTW-GDL) 01 To maintain and protect scenic qualities, management activities should be consistent with the scenic integrity objective of very high.	Guideline (MA-PCTW-GDL) 01 Same as Alternative B.	Guideline (MA-PCTW-GDL) 01 Same as Alternative B.
MANAGEMENT AREA – Pacific Crest Trail outside Designated Wilderness – <i>Desired Conditions</i>		
Desired Condition (MA-PCT-DC) 01 The Pacific Crest National Scenic Trail provides for outstanding journeys on foot or on horseback along the Pacific mountain ranges. These primitive forms of travel, hearken back to a simpler and more rugged time. Tranquility and closeness with nature can be found consistently along the trail, evoking a feeling of extended retreat from civilization, even if only venturing out for a day.	Desired Condition (MA-PCT-DC) 01 Same as Alternative B.	Desired Condition (MA-PCT-DC) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Desired Condition (MA-PCT-DC) 02 The Pacific Crest National Scenic Trail corridor retains a natural, forested or pastoral landscape character shaped by both natural processes and humans. Management practices are modified to recognize the nationally significant scenic attributes and recreational values of these lands. Vegetation management is appropriate to maintain the long-term goals and stewardship objectives of the Pacific Crest Trail management area and provide for ecosystem restoration, public safety, and enhancement of the trail environment.	Desired Condition (MA-PCT-DC) 02 Same as Alternative B.	Desired Condition (MA-PCT-DC) 02 Same as Alternative B.
Desired Condition (MA-PCT-DC) 03 The landscape is natural appearing. The trail provides for the conservation and enjoyment of scenic, historic, natural, and cultural qualities of the areas through which it passes.	Desired Condition (MA-PCT-DC) 03 Same as Alternative B.	Desired Condition (MA-PCT-DC) 03 Same as Alternative B.
Desired Condition (MA-PCT-DC) 04 Panoramic views of natural landscapes in a tranquil and scenic environment are provided.	Desired Condition (MA-PCT-DC) 04 Same as Alternative B.	Desired Condition (MA-PCT-DC) 04 Same as Alternative B.
Desired Condition (MA-PCT-DC) 05 Scenic integrity objectives and scenic stability levels are maintained to retain panoramic views and landscape connectivity. Lands viewed beyond the management area meet the scenery integrity objective of at least moderate.	Desired Condition (MA-PCT-DC) 05 Same as Alternative B.	Desired Condition (MA-PCT-DC) 05 Same as Alternative B.
MANAGEMENT AREA – Pacific Crest Trail outside Designated Wilderness – Standards		
Standard (MA-PCT-STD) 01 Prohibit heavy equipment line construction on the Pacific Crest National Scenic Trail, unless necessary for emergency protection of property and safety.	Standard (MA-PCT-STD) 01 Same as Alternative B.	Standard (MA-PCT-STD) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Standard (MA-PCT-STD) 02 Project design and mitigation for utility and rights-of-way projects within the corridor must be sufficient to protect trail values. Require mitigation measures including screening, feathering, and other visual management techniques to mitigate visual and other impacts of new or upgraded utility rights-of-way. Avoidance, on-site mitigation, and off-site mitigation are pursued in successive order.	Standard (MA-PCT-STD) 02 Project design and mitigation for utility and rights-of-way projects within the corridor must be sufficient to protect trail values. Require mitigation measures including screening, feathering, and other visual management techniques to mitigate visual and other impacts of upgraded utility rights-of-way. Avoidance, on-site mitigation, and off-site mitigation are pursued in successive order. Prohibit any new utility rights-of-way across or along the Pacific Crest Trail.	Standard (MA-PCT-STD) 02 Same as Alternative B.
Standard (MA-PCT-STD) 03 New roads (roads that are not designated and there is no existing footprint) within the corridor, are not permitted unless required by law to provide access to private lands or determined to be the only prudent and feasible option.	Standard (MA-PCT-STD) 03 Same as Alternative B.	Standard (MA-PCT-STD) 03 Same as Alternative B.
Standard (MA-PCT-STD) 04 Hauling or skidding along the Pacific Crest National Scenic Trail or using the trail for landings or temporary roads is prohibited.	Standard (MA-PCT-STD) 04 Same as Alternative B.	Standard (MA-PCT-STD) 04 Same as Alternative B.
MANAGEMENT AREA – Pacific Crest Trail outside Designated Wilderness – Guidelines		
Guideline (MA-PCT-GDL) 01 To maintain and protect the scenic qualities of the Pacific Crest National Scenic Trail, management activities within the corridor should be consistent with a scenic integrity objective of high.	Guideline (MA-PCT-GDL) 01 To maintain and protect the scenic qualities of the Pacific Crest National Scenic Trail, management activities should be consistent with the scenic integrity objective of very high.	Guideline (MA-PCT-GDL) 01 Same as Alternative B.
Guideline (MA-PCT-GDL) 02 New recreation events on the Pacific Crest National Scenic Trail, such as foot races, horseback endurance events, and fundraising events should be limited to designated crossings only to minimize conflicts with the nature and purposes of the trail. Existing recreation events on the Pacific Crest National Scenic Trail may be allowed to continue at current levels.	Guideline (MA-PCT-GDL) 02 Same as Alternative B.	Guideline (MA-PCT-GDL) 02 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Guideline (MA-PCT-GDL) 03 Designated roads and all trails within the corridor should minimize impacts to the scenic, natural, and experiential values of the trail. Exemptions may be allowed if required by law to provide access to private lands or determined to be the only prudent and feasible option.	Guideline (MA-PCT-GDL) 03 Same as Alternative B.	Guideline (MA-PCT-GDL) 03 Same as Alternative B.
Guideline (MA-PCT-GDL) 04 New buildings and structures within the corridor that would be visible from the Pacific Crest National Scenic Trail should be designed to minimize impacts to the scenic character of the trail.	Guideline (MA-PCT-GDL) 04 Same as Alternative B.	Guideline (MA-PCT-GDL) 04 Same as Alternative B.
MANAGEMENT AREA – Pacific Crest Trail outside Designated Wilderness – Suitability		
Suitability (MA-PCT-SUIT) 01 New commercial communication sites and energy generation sites are not suitable.	Suitability (MA-PCT-SUIT) 01 Same as Alternative B.	Suitability (MA-PCT-SUIT) 01-05 Same as Alternative B.
Suitability (MA-PCT-SUIT) 02 Locatable and leasable mineral exploration or extraction that causes surface disturbance is not suitable.	Suitability (MA-PCT-SUIT) 02 Same as Alternative B.	Suitability (MA-PCT-SUIT) 02 Same as Alternative B.
Suitability (MA-PCT-SUIT) 03 Commercial extraction of mineral materials such as sand, gravel, pumice, cinders, and other common variety minerals is not suitable.	Suitability (MA-PCT-SUIT) 03 Same as Alternative B.	Suitability (MA-PCT-SUIT) 03 Same as Alternative B.
Suitability (MA-PCT-SUIT) 04 Designated roads and trails within the corridor, including crossings of the Pacific Crest National Scenic Trail are suitable.	Suitability (MA-PCT-SUIT) 04 Same as Alternative B.	Suitability (MA-PCT-SUIT) 04 Same as Alternative B.
Suitability (MA-PCT-SUIT) 05 Year-round motorized or mechanized transport on the Pacific Crest National Scenic Trail is not suitable.	Suitability (MA-PCT-SUIT) 05 Same as Alternative B.	Suitability (MA-PCT-SUIT) 05 Same as Alternative B.

Table A-32. Timber Management

Alternative B	Alternative C and E	Alternative D
TIMBER MANAGEMENT – Forestwide – Desired Conditions		
Desired Condition (TIMB-FW-DC) 01 Predictable and sustainable forest product yields contribute to maintaining and improving local and regional industry infrastructure and workforce and are sufficient to meet the needs of the desired pace and scale of ecological restoration over the next several decades.	Desired Condition (TIMB-FW-DC) 01 Same as Alternative B.	Desired Condition (TIMB-FW-DC) 01 Same as Alternative B.
Desired Condition (TIMB-FW-DC) 02 Production of timber contributes to ecological, social, and economic sustainability and associated desired conditions. A sustainable mix of forest products (including both sawtimber and non-sawtimber) is offered under a variety of harvest and contract methods in response to market demand and restoration needs.	Desired Condition (TIMB-FW-DC) 02 Same as Alternative B.	Desired Condition (TIMB-FW-DC) 02 Same as Alternative B.
Desired Condition (TIMB-FW-DC) 03 Salvage, including sanitation cutting, of dead and dying trees captures as much of the economic value and carbon storage capacity of the wood as possible while retaining key features in quantities that provide for wildlife habitat, soil productivity and ecosystem functions, consistent with restoring the landscape towards desired conditions.	Desired Condition (TIMB-FW-DC) 03 Same as Alternative B.	Desired Condition (TIMB-FW-DC) 03 Same as Alternative B.
TIMBER MANAGEMENT – Forestwide – Goals		
Goal (TIMB-FW-GOAL) 01 After disturbances occur on lands identified as suitable for timber production, where consistent with terrestrial vegetation desired conditions, and when funding is available, adequately restock these areas within 5 years of salvage harvest, if applicable, or, when salvage harvest is not used, within 5 years of site preparation.	Goal (TIMB-FW-GOAL) 01 Same as Alternative B.	Goal (TIMB-FW-GOAL) 01 Same as Alternative B.
Goal SQF (TIMB-FW-GOAL) 02 As resources and partner support are available, conduct reforestation on up to an average of 1,000 acres per year where needed to achieve desired conditions based on natural range of variation, and considering changing environmental conditions.	Goal SQF (TIMB-FW-GOAL) 02 As resources and partner support are available, conduct reforestation on up to an average of 500 acres per year where needed to achieve desired conditions based on natural range of variation, and considering changing environmental conditions.	Goal SQF (TIMB-FW-GOAL) 02 As resources and partner support are available, conduct reforestation on up to an average of 2,000 acres per year where needed to achieve desired conditions based on natural range of variation, and considering changing environmental conditions.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Goal SNF (TIMB-FW-GOAL) 02 As resources and partner support are available, conduct reforestation on up to an average of 3,500 acres per year where needed to achieve desired conditions based on natural range of variation, and considering changing environmental conditions.	Goal SNF (TIMB-FW-GOAL) 02 As resources and partner support are available, conduct reforestation on up to an average of 2,000 acres per year where needed to achieve desired conditions based on natural range of variation, and considering changing environmental conditions.	Goal SNF (TIMB-FW-GOAL) 02 As resources and partner support are available, conduct reforestation on up to an average of 4,5000 acres per year where needed to achieve desired conditions based on natural range of variation, and considering changing environmental conditions.
TIMBER MANAGEMENT – Forestwide – Objectives		
Objective SNF (TIMB-FW-OBJ) 01 Provide approximately 20 to 40 MMCF per decade to contribute to the local forest products infrastructure (see appendix E, timber suitability and management).	Objective SNF (TIMB-FW-OBJ) 01) Provide approximately 5 to 10 MMCF per decade to contribute to the local forest products infrastructure (see appendix E, timber suitability and management).	Objective SNF (TIMB-FW-OBJ) 01) Provide approximately 30 to 60 MMCF per decade to contribute to the local forest products infrastructure (see appendix E, timber suitability and management).
Objective SQF (TIMB-FW-OBJ) 01 Provide approximately 5 to 8 MMCF per decade to contribute to the local forest products infrastructure.	Objective SQF (TIMB-FW-OBJ) 01 Provide approximately 2 to 4 MMCF per decade to contribute to the local forest products infrastructure.	Objective SQF (TIMB-FW-OBJ) 01 Provide approximately 6 to 12 MMCF per decade to contribute to the local forest products infrastructure.
TIMBER MANAGEMENT – Forestwide – Standards		
Standard (TIMB-FW-STD) 01 Following regulated regeneration harvest (such as group selection) on lands identified as suitable for timber production, create and maintain planting environments that favor seedling survival and rapid growth rates. Facilitate early and periodic use of fire to reduce future wildfire-related mortality, and provide sufficient tree numbers to meet future vegetation desired conditions that support a variety of ecosystem services and resilience, including forest products, wildlife habitat and carbon storage. A site-specific silvicultural prescription will be designed to ensure that lands are adequately restocked within 5 years of a regeneration harvest (see appendix E for stocking criteria).	Standard (TIMB-FW-STD) 01 Same as Alternative B.	Standard (TIMB-FW-STD) 01 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Alternative B	Alternative C and E	Alternative D
Standard (TIMB-FW-STD) 02 When conducting reforestation in response to wildfire, windthrow, insects, pathogens, or other stand-replacing disturbances, create and maintain planting environments that favor seedling survival and growth, facilitate early and periodic use of fire to reduce future wildfire-related mortality, and provide sufficient tree numbers to meet future vegetation desired conditions, considering future changes in climate, to provide a variety of ecosystem services including forest products and carbon storage.	Standard (TIMB-FW-STD) 02 Same as Alternative B.	Standard (TIMB-FW-STD) 02 Same as Alternative B.
TIMBER MANAGEMENT – Forestwide – Guidelines		
Guideline (TIMB-FW-GDL) 01 Discourage the retention of snags within and immediately adjacent to areas planned for reforestation to mitigate hazards to workers. High fuel levels should not be retained in plantations that would preclude the use of prescribed burning at appropriate times as the plantation matures.	Guideline (TIMB-FW-GDL) 01 Same as Alternative B.	Guideline (TIMB-FW-GDL) 01 Same as Alternative B.
Guideline (TIMB-FW-GDL) 02 Reforestation of suitable lands should be designed to achieve stocking levels, spatial arrangements and species composition to facilitate future vegetation desired conditions that allow for long-term resilience of the developing forest, while considering potential future plantation management, carbon carrying capacity, wildlife habitat and climate change adaptation. Competing vegetation, fuel levels, and fire risk should be managed to provide for the long-term survival and vigor of reestablishing forests as they move toward maturity.	Guideline (TIMB-FW-GDL) 02 Same as Alternative B.	Guideline (TIMB-FW-GDL) 02 Same as Alternative B.
Guideline (TIMB-FW-GDL) 03 On lands not suited for timber production, reforestation of deforested lands should contribute to ecological restoration of desired vegetation conditions, to provide benefits such as improved scenic character, wildlife habitat, carbon storage, and watershed condition.	Guideline (TIMB-FW-GDL) 03 Same as Alternative B.	Guideline (TIMB-FW-GDL) 03 Same as Alternative B.

Table A-33. Rangeland Management

Revisions to Alternative B	Alternative C and E	Alternative D
RANGELAND MANAGEMENT – Forestwide – Desired Conditions		
Desired Condition (RANG-FW-DC) 01 Rangelands, along with grazable forestlands and woodlands, provide large areas of contiguous space supporting native and desired nonnative vegetation that has the potential to be grazed. These ranges sustain biological diversity and ecological processes and help to preserve the rural landscape and cultural heritage of the central, southern and eastern Sierra Nevada.	Desired Condition (RANG-FW-DC) 01 Same as Alternative B.	Desired Condition (RANG-FW-DC) 01 Same as Alternative B.
Desired Condition (RANG-FW-DC) 02 Livestock grazing is managed to meet or move towards the desired vegetation condition represented by diverse plant functional groups, species richness and diversity, and structure and condition of plant communities.	Desired Condition (RANG-FW-DC) 02 Same as Alternative B.	Desired Condition (RANG-FW-DC) 02 Same as Alternative B.
Desired Condition (RANG-FW-DC) 03 Manage rangelands to maintain or restore hydrologic function and soil productivity of watersheds. Livestock grazing is managed to accommodate the maintenance or restoration of aquatic and riparian processes and functions.	Desired Condition (RANG-FW-DC) 03 Same as Alternative B.	Desired Condition (RANG-FW-DC) 03 Same as Alternative B.
Desired Condition (RANG-FW-DC) 04 Rangelands are in satisfactory condition and allotments have management strategies that achieve or maintain rangeland conditions in satisfactory condition.	Desired Condition (RANG-FW-DC) 04 Same as Alternative B.	Desired Condition (RANG-FW-DC) 04 Same as Alternative B.
Desired Condition (RANG-FW-DC) 05 Annual grasslands that are grazed have livestock management strategies that encourage retention and recruitment of native plants, encourage retention of desirable exotic plants, and discourage or suppress undesirable and invasive exotic plants. These livestock management strategies are adaptable to rapidly changing conditions in forage quality or production.	Desired Condition (RANG-FW-DC) 05 Same as Alternative B.	Desired Condition (RANG-FW-DC) 05 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Revisions to Alternative B	Alternative C and E	Alternative D
RANGELAND MANAGEMENT – Forestwide – Goals		
Goal (RANG-FW-Goal) 01 Work with stakeholders ensures livestock grazing management strategies in oak woodland, aspen and woody riparian areas encourage regeneration of hardwood and riparian woody vegetation.	Goal (RANG-FW-Goal) 01 Same as Alternative B.	Goal (RANG-FW-Goal) 01 Same as Alternative B.
Goal (RANG-FW-Goal) 02 Work with stakeholders ensures livestock grazing management strategies minimize negative effects to the structure and function of vegetation and aquatic and riparian ecosystems, especially for small-scale special aquatic features such as fens and springs, as well as habitat and refugia for at-risk species.	Goal (RANG-FW-Goal) 02 Same as Alternative B.	Goal (RANG-FW-Goal) 02 Same as Alternative B.
Goal (RANG-FW-Goal) 03 Work with stakeholders ensures livestock grazing management strategies are adaptable to changes in available forage due to wildfire or drought, and to post-fire transitory range.	Goal (RANG-FW-Goal) 03 Same as Alternative B.	Goal (RANG-FW-Goal) 03 Same as Alternative B.
RANGELAND MANAGEMENT – Forestwide – Standards		
Standard (RANG-FW-STD) 01 Manage livestock grazing to attain desired conditions in blue oak-interior live oak woodlands, annual grasslands, aspen, special habitats, great gray owl protected activity areas, occupied willow flycatcher habitat, and riparian conservation areas. Where livestock grazing is found to prevent or retard attainment of desired conditions, modify grazing practices (such as number of livestock, timing, scheduled rest, and range structures). If adjusting practices is not effective, remove livestock from the area using appropriate administrative authorities and procedures.	Standard (RANG-FW-STD) 01 Manage livestock grazing to attain desired conditions in blue oak-interior live oak woodlands, annual grasslands, aspen, special habitats, great gray owl protected activity areas, occupied willow flycatcher habitat, riparian conservation areas and critical aquatic refuges. Where livestock grazing is found to prevent or retard attainment of desired conditions, modify grazing practices (such as number of livestock, timing, scheduled rest, and range structures). If adjusting practices is not effective, remove livestock from the area using appropriate administrative authorities and procedures.	Standard (RANG-FW-STD) 01 Same as Alternative B.
Standard (RANG-FW-STD) 02 During allotment management planning, livestock handling facilities, stock driveways in riparian areas will be placed to meet riparian conservation area, watershed or water quality standards and guidelines.	Standard (RANG-FW-STD) 02 Same as Alternative B.	Standard (RANG-FW-STD) 02 Same as Alternative B.

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Revisions to Alternative B	Alternative C and E	Alternative D
Standard (RANG-FW-STD) 03 Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are at a minimum proper functioning condition or functioning at-risk with an upward trend, as defined in the appropriate technical reports.	Standard (RANG-FW-STD) 03 Same as Alternative B.	Standard (RANG-FW-STD) 03 Same as Alternative B.
Standard (RANG-FW-STD) 04 If meadow ecological status is determined to be moving in a downward trend due to grazing, modify or suspend grazing. Management of meadows that are in low ecological status or not in proper functioning condition and have active erosion will be modified to achieve or show substantial progress toward meeting mid- or late seral status and proper functioning condition within 5 years.	Standard (RANG-FW-STD) 04 Same as Alternative B.	Standard (RANG-FW-STD) 04 Same as Alternative B.
RANGELAND MANAGEMENT – Forestwide – Guidelines		
Guideline (RANG-FW-GDL) 01 Where annual grasslands have an annual precipitation greater than 10 inches, manage for a minimum residual dry matter of 700 pounds per acre and an average of 60 percent ground cover at the end of the grazing season. Where annual grasslands have an annual precipitation of less than 10 inches manage for 400 pounds residual dry matter per acre. Adjust these guidelines as needed based on grassland condition, and other vegetation or fuels management objectives.	Guideline (RANG-FW-GDL) 01 Same as Alternative B.	Guideline (RANG-FW-GDL) 01 Same as Alternative B.
Guideline (RANG-FW-GDL) 02 Burned areas should be evaluated to determine if rest from livestock grazing is necessary for recovery of desired vegetation conditions and related biophysical resources.	Guideline (RANG-FW-GDL) 02 Same as Alternative B.	Guideline (RANG-FW-GDL) 02 Same as Alternative B.

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Revisions to Alternative B	Alternative C and E	Alternative D
Guideline (RANG-FW-GDL) 03 In terrestrial upland vegetation types having good to excellent vegetation and soils conditions, limit grazing utilization to 45 percent use by weight on herbaceous perennial plants and an average of 20 percent use of annual leader growth on other woody shrubs. Browse use may vary across the landscape to accommodate land use objectives such as maintenance of open areas for reduced fuels or public access. Reduce utilization levels by 10 percent or more on sites trending downward in condition or with fair vegetation and soil conditions.	Guideline (RANG-FW-GDL) 03 Same as Alternative B.	Guideline (RANG-FW-GDL) 03 Same as Alternative B.
Guideline (RANG-FW-GDL) 04 To protect oak regeneration in grazing allotments, allow livestock browsing on no more than 20-30 percent of annual growth of oak seedlings and advanced regeneration. Modify grazing plans if desired recruitment needs for hardwood trees are not being met.	Guideline (RANG-FW-GDL) 04 Same as Alternative B.	Guideline (RANG-FW-GDL) 04 Same as Alternative B.
Guideline (RANG-FW-GDL) 05 To manage for multi-aged stands of aspen, limit browsing on no more than 20-25 percent of annual terminal leader growth of aspen seedlings, young trees and advanced regeneration. Modify grazing plans if hardwood regeneration and recruitment needs are not being met.	Guideline (RANG-FW-GDL) 05 Same as Alternative B.	Guideline (RANG-FW-GDL) 05 Same as Alternative B.
Guideline (RANG-FW-GDL) 06 Limit use of willows and other woody riparian species to no more than 20-30 percent of current year's leader growth along streambanks and, as needed, other critical portions of the riparian conservation area. Remove livestock from the area when these utilization indicators are reached or exceeded.	Guideline (RANG-FW-GDL) 06 Same as Alternative B.	Guideline (RANG-FW-GDL) 06 Same as Alternative B.

Appendix A. Comparison of Action Alternative Plan Components

Revisions to Alternative B	Alternative C and E	Alternative D
<p>Guideline (RANG-FW-GDL) 07 Grazing in riparian conservation areas under season-long use:</p> <ul style="list-style-type: none"> For meadows and riparian areas that are functioning at-risk with a downward trend and/or are in low to mid-seral condition with a downward trend, limit livestock utilization of deep-rooted herbaceous plants to 30-35 percent. For stream channels and drainways, maintain a minimum 6-inch residual stubble height on the greenline. For meadows and riparian areas that are properly functioning or functioning at-risk with an upward trend and/or are in mid-seral or better condition with a stable to upward trend, limit livestock utilization of deep-rooted herbaceous plants to 40-45 percent. For stream channels and drainways, maintain a minimum 4-inch residual stubble height on the greenline. For riparian management areas in low elevation, blue oak-interior live oak terrestrial ecosystems limit livestock utilization of deep-rooted herbaceous plants to 45-50 percent. 	<p>Guideline (RANG-FW-GDL) 07 Same as Alternative B.</p>	<p>Guideline (RANG-FW-GDL) 07 Same as Alternative B.</p>
<p>Guideline (RANG-FW-GDL) 08 Grazing under intensive grazing systems where riparian conservation areas receive scheduled rest, such as rest-rotation or deferred rotation, utilization levels may be higher than the levels described under season-long use if the meadow and/or riparian area is maintaining mid- to late-seral ecological conditions and meadow associated wildlife are not being adversely impacted.</p>	<p>Guideline (RANG-FW-GDL) 08 Same as Alternative B.</p>	<p>Guideline (RANG-FW-GDL) 08 Same as Alternative B.</p>

Appendix A. Comparison of Action Alternative Plan Components

Revisions to Alternative B	Alternative C and E	Alternative D
Guideline (RANG-FW-GDL) 09 Move or remove livestock in riparian conservation areas that are not properly functioning or functioning at-risk with a downward trend. Limit annual disturbance to streambanks and shorelines of natural lakes and ponds, when livestock trampling and trailing exceeds 20 percent of stream reach, or natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots.	Guideline (RANG-FW-GDL) 09 Same as Alternative B.	Guideline (RANG-FW-GDL) 09 Same as Alternative B.
Guideline (RANG-FW-GDL) 10 Where professional judgment and quantifiable measurements find that current practices are maintaining range in good to excellent condition, the grazing utilization and/or disturbance indicators may be modified to allow for the Forest Service, in partnership with individual permittees, to evaluate alternative timing or methods of evaluation.	Guideline (RANG-FW-GDL) 10 Same as Alternative B.	Guideline (RANG-FW-GDL) 10 Same as Alternative B.
Guideline (RANG-FW-GDL) 11 Select a minimum of one designated monitoring area for each subunit or pasture within an allotment that serves as the basis for establishing standards and guidelines across the entire subunit or pasture. At a minimum, these designated areas should include an apparent trend rating of vegetation, condition rating of soils, and a photo record.	Guideline (RANG-FW-GDL) 11. Same as Alternative B.	Guideline (RANG-FW-GDL) 11 Same as Alternative B.
Guideline SNF (RANG-FW-GDL) 12 To minimize adverse impacts of grazing activities on the Yosemite toad suitable breeding and rearing habitat, indicators will be used to evaluate when grazing management practices will need to be revised to meet desired conditions for the toad. The indicators and indicator values shown in the table below should be applied on a rotating basis or when seasonal monitoring or other monitoring indicate concerns for occupied habitat. <ul style="list-style-type: none"> • See forest plan 	Guideline SNF (RANG-FW-GDL) 12 Same as Alternative B.	Guideline SNF (RANG-FW-GDL) 12 Same as Alternative B.

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Appendix B

Wilderness Recommendation Process

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Appendix B.

Wilderness Recommendation Process

Overview

As part of the land management plan revision process, Sequoia and Sierra National Forest personnel are required to “identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System (NWPS), and determine whether to recommend any such lands for wilderness designation” (Title 36, Code of Federal Regulations, Part 219.7(v)). The process occurs in four primary steps: inventory, evaluation, analysis, and recommendation. Each step requires public participation.

The inventory step identifies all lands in the plan area that may be suitable for inclusion in the National Wilderness Preservation System using the criteria in Section 71 of Forest Service Handbook 1909.12-2015-1, chapter 70 – Wilderness (Wilderness Recommendation Handbook). The evaluation step examines the wilderness characteristics of lands in the inventory using the criteria in section 72 of the Wilderness Recommendation Handbook. The analysis step further analyzes the effects of recommending wilderness designations for evaluated areas or portions thereof that are included in one or more of the plan alternatives.

The recommendation step concludes the process with documenting the forest supervisor’s decision and identifying which areas, if any, are recommended for inclusion in the National Wilderness Preservation System. The recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. The Congress has reserved the authority to make final decisions on wilderness designation. Plan implementation is not dependent upon subsequent action related to recommendations for wilderness designation.

Not all lands included in the inventory and subsequent evaluations are required to be analyzed as potential recommended wilderness. Inclusion in the inventory or one or more alternatives not selected is not a designation that conveys or requires a particular kind of management. Areas that are not recommended for wilderness are available for inclusion in other management areas in the forest plan.

This appendix begins by providing information related to the most recent step in the wilderness recommendation process (analysis), followed by information related to the evaluation and then a summary of the whole process, including the inventory:

- Recommended Wilderness Analysis Summary: areas analyzed, those that were not analyzed, and why.
- Detailed Descriptions of Analyzed Areas: areas included in one or more of the plan alternatives.
- Evaluation of Wilderness Characteristics: detailed examination of areas carried forward from the inventory.
- Description of the Wilderness Recommendation Process.

Recommended Wilderness Analysis Summary

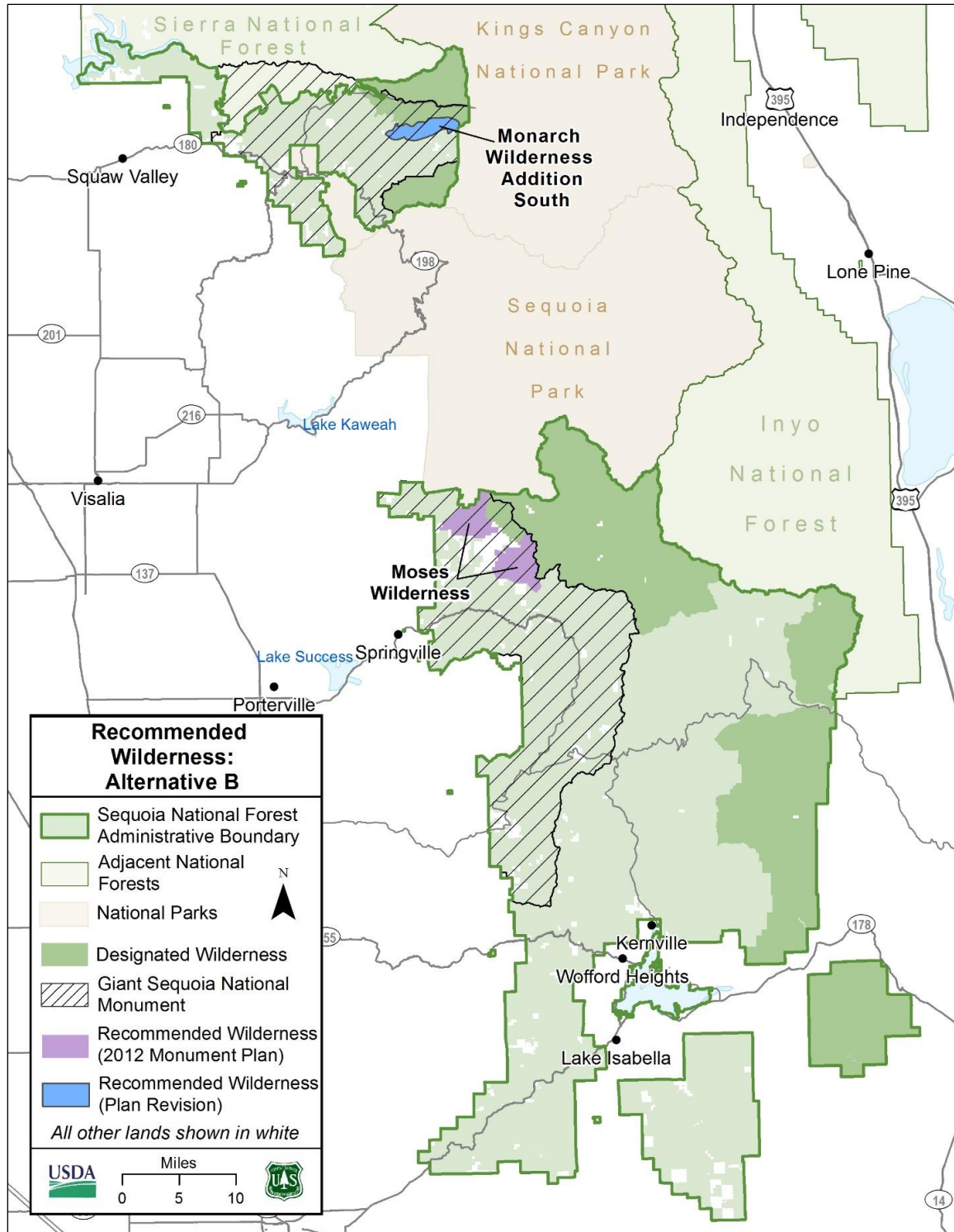
The forest supervisors for the Sequoia and Sierra National Forests will make decisions about which specific areas to recommend for inclusion in the National Wilderness Preservation System. The decision will be included in the record of decision for the forest plans.

Table B-1 and Map B-1 provide a summary of the one area within the Sequoia National Forest analyzed as recommended wilderness in alternative B. Alternative B did not include recommended wilderness within the Sierra National Forest. Table B-2 and Map B-2 provide a summary of the areas within the Sequoia National Forest that were analyzed as recommended wilderness in alternative C. Table B-3 and Map B-3 provide a summary of the areas within the Sierra National Forest that were analyzed as recommended wilderness in alternative C. Detailed descriptions and individual maps of each of these analyzed areas can be found in the next section. Alternatives A and D did not include recommended wilderness within the national forests. Table B-4 and Map B-4 and provide a summary of the areas within Sequoia National Forest that were analyzed as recommended wilderness in alternative E. Table B-5 and Map B-5 provide a summary of the areas within Sierra National Forest that were analyzed as recommended wilderness in alternative E.

Table B-6 (Sequoia National Forest) and Table B-7 (Sierra National Forest) provide rationale explaining why some evaluation polygons or portions of polygons were not analyzed as recommended wilderness.

Table B-1. Sequoia National Forest areas analyzed as recommended wilderness in alternative B

Analysis Polygon Name	Analysis Polygon Acres	Evaluation Polygon Name	Evaluation Polygon Acres	Evaluation Polygon Number
Monarch Wilderness Addition – South	4,906	Adjacent to Monarch Wilderness	11,559	1377

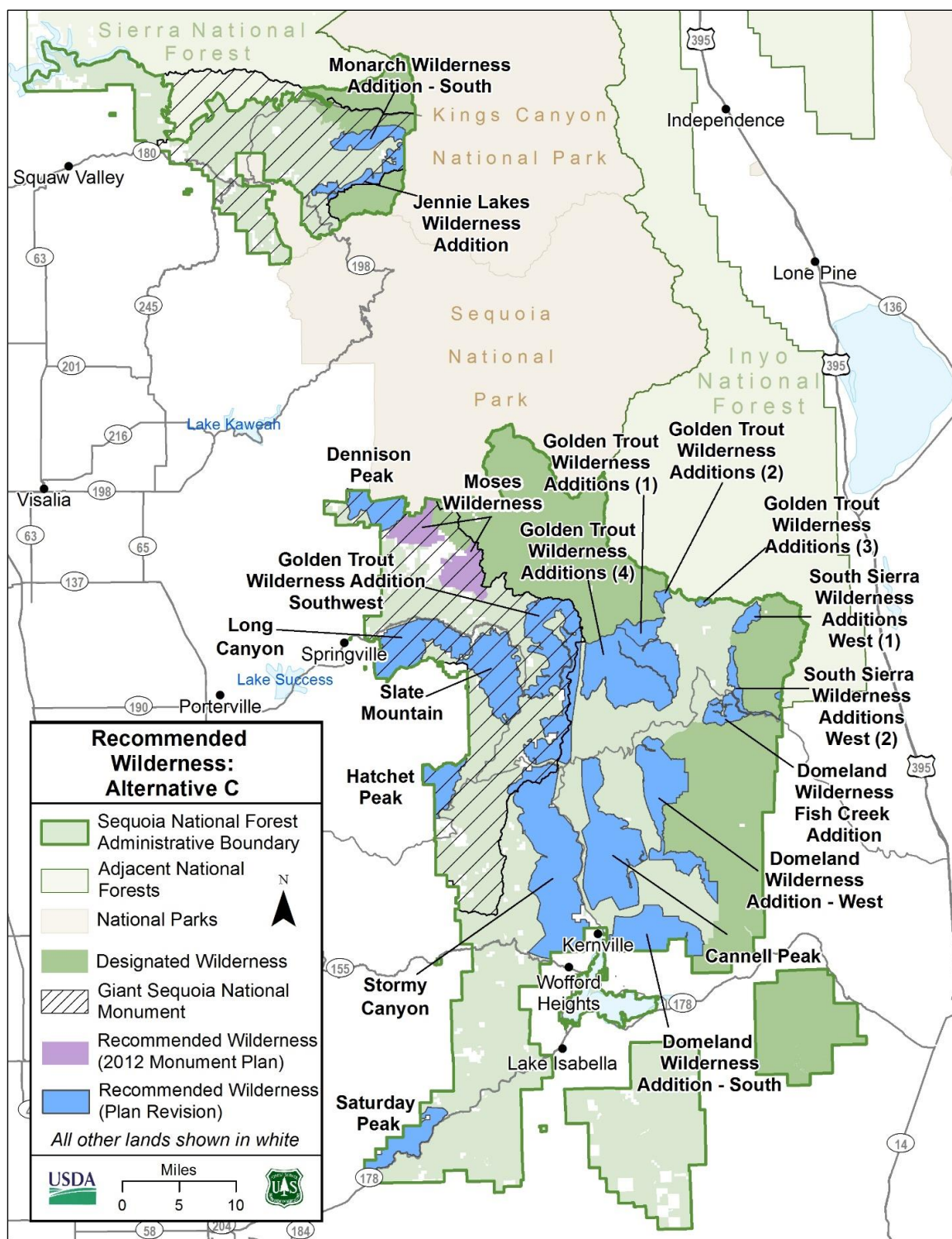


Map B-1. Sequoia National Forest areas analyzed as recommended wilderness in alternative B

Table B-2. Sequoia National Forest areas analyzed as recommended wilderness in alternative C

Analysis Polygon Name	Analysis Polygon Acres	Evaluation Polygon Name	Evaluation Polygon Acres	Evaluation Polygon Number
Saturday Peak	8,176	Saturday Peak-Greenhorn Roadless	8,289	66
Slate Mountain	16,004	Slate Mountain	16,126	160
Long Canyon	15,794	North of Black Mountain	15,806	162
Dennison Peak	7,100	Dennison Peak	7,100	190
Monarch Wilderness Addition – South	5,472	Adjacent to Monarch Wilderness	11,559	1377
Cannell Peak	27,208	Cannell Peak	39,629	1384
Jennie Lakes Wilderness Addition	5,263	Jennie Lakes Roadless - adjacent to Jennie Lakes Wilderness	8,216	1385
Golden Trout Wilderness Additions (1)	3,488	North Fork Kern- adjacent to Golden Trout Wilderness	89,627	1387
Golden Trout Wilderness Addition – Southwest	27,973	North Fork Kern - adjacent to Golden Trout Wilderness	89,627	1387
Golden Trout Wilderness Additions (4)	28,173	North Fork Kern - adjacent to Golden Trout Wilderness	89,627	1387
Golden Trout Wilderness Additions (2)	967	Osa Meadows, Adjacent to Golden Trout Wilderness	1,100	1390
Golden Trout Wilderness Additions (3)	492	Monache, Blackrock and South Sierra East	17,745	1391*
South Sierra Wilderness Additions – West (1)	2,155	Monache, Blackrock and South Sierra East	17,745	1391*
South Sierra Wilderness Additions – West (2)	2,880	Monache, Blackrock and South Sierra East	17,745	1391*
Domeland Wilderness Addition – West	18,817	Domeland/Woodpecker Roadless Area, Adjacent to Domeland Wilderness	51,801	1394
Domeland Wilderness Addition – South	14,666	Domeland/Woodpecker Roadless Area, Adjacent to Domeland Wilderness	51,801	1394
Hatchet Peak	6,606	Hatchet Peak	6,068	1404
Stormy Canyon	40,457	Upper Kern Canyon Escarpment-Baker Peak	48,730	1408
Domeland Wilderness Fish Creek Addition	3,932	Woodpecker Roadless, Adjacent to Domeland Wilderness	7,234	1431

* Evaluation Polygon 1391 overlays the boundary between the Inyo and Sequoia National Forests, with portions in each forest. The figures here represent only the acres within the Sequoia National Forest.

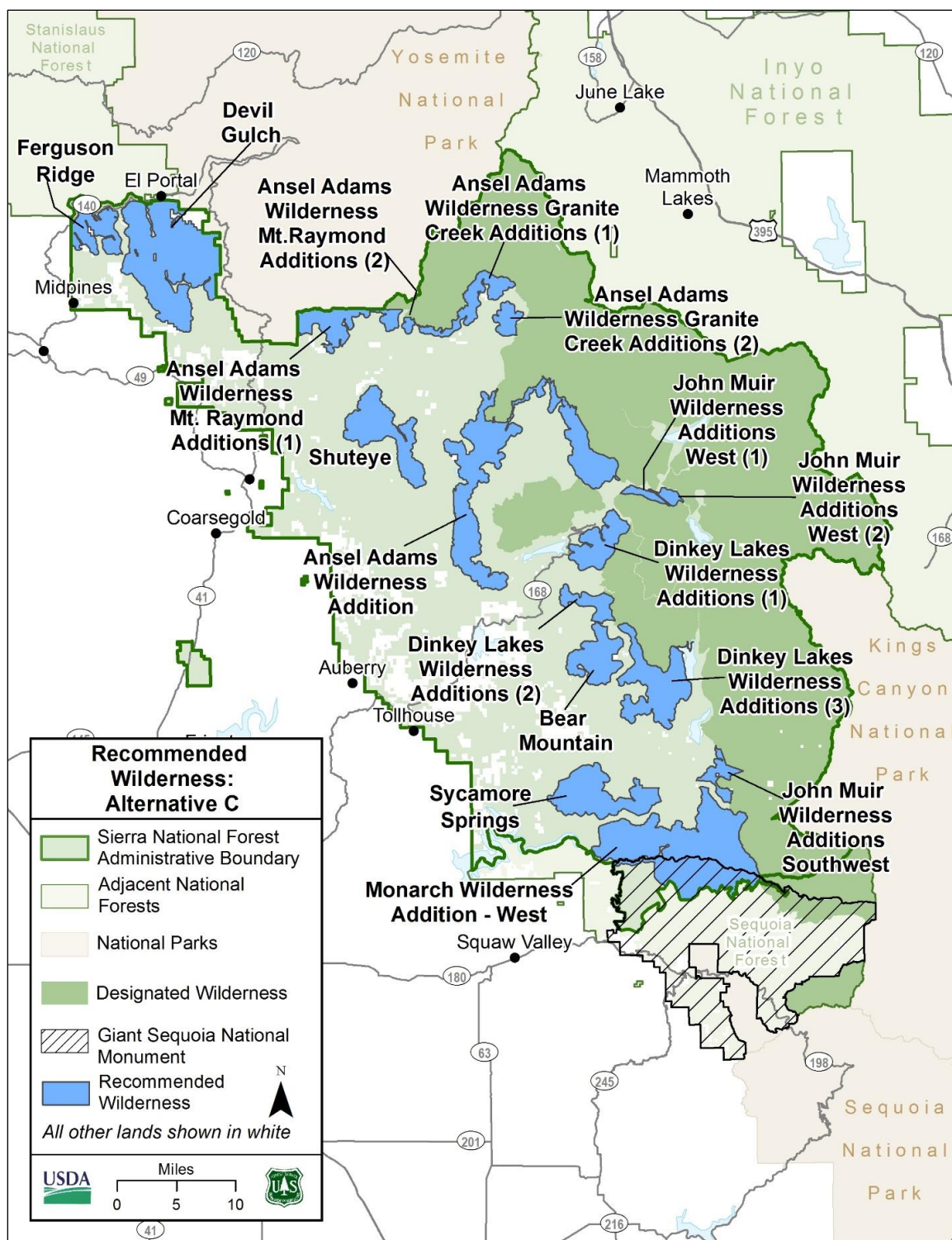


Map B-2. Sequoia National Forest areas analyzed as recommended wilderness in alternative C

Table B-3. Sierra National Forest areas analyzed as recommended wilderness in alternative C

Analysis Polygon Name	Analysis Polygon Acres	Evaluation Polygon Name	Evaluation Polygon Acres	Evaluation Polygon Number
Sycamore Springs	17,908	Sycamore Springs	17,908	315
Bear Mountain	9,247	Adjacent to Dinkey Lakes Wilderness	48,312	539
Dinkey Lakes Wilderness Additions (1)	8,317	Adjacent to Dinkey Lakes Wilderness	48,312	539
Dinkey Lakes Wilderness Additions (2)	4,178	Adjacent to Dinkey Lakes Wilderness	48,312	539
Dinkey Lakes Wilderness Additions (3)	16,318	Adjacent to Dinkey Lakes Wilderness	48,312	539
Shuteye	14,418	Shuteye	18,013	646
Devil Gulch	37,325	Devil Gulch	47,747	772
Ferguson Ridge	7,800	Devil Gulch	47,747	772
John Muir Wilderness Additions – West (1)	1,299	Adjacent to John Muir Wilderness 3	1,299	797
John Muir Wilderness Additions – West (2)	1,206	Adjacent to John Muir Wilderness 2	1,206	795
Ansel Adams Wilderness Addition	37,062	San Joaquin River, Adjacent to Ansel Adams Wilderness	37,528	819
Ansel Adams Wilderness Mount Raymond Additions (1)	9,117	Mount Raymond	13,370	821
Ansel Adams Wilderness Mount Raymond Additions (2)	661	Mount Raymond	13,370	821
Ansel Adams Wilderness Granite Creek Additions (1)	6,964	Adjacent to Ansel Adams Wilderness	10,581	822
Ansel Adams Wilderness Granite Creek Additions (2)	2,949	Adjacent to Ansel Adams Wilderness	10,581	822
John Muir Wilderness Additions – Southwest	3,359	Adjacent to John Muir and Monarch Wildernesses	71,974	1378*
Monarch Wilderness Addition – West	42,512	Adjacent to John Muir and Monarch Wildernesses	71,974	1378*

* Evaluation Polygon 1378 overlays the boundary between the Sequoia and Sierra National Forests, with portions in each forest. 57,364 acres of the evaluation polygon are administered by the Sierra National Forest. The analysis area only includes acres within the Sierra National Forest.



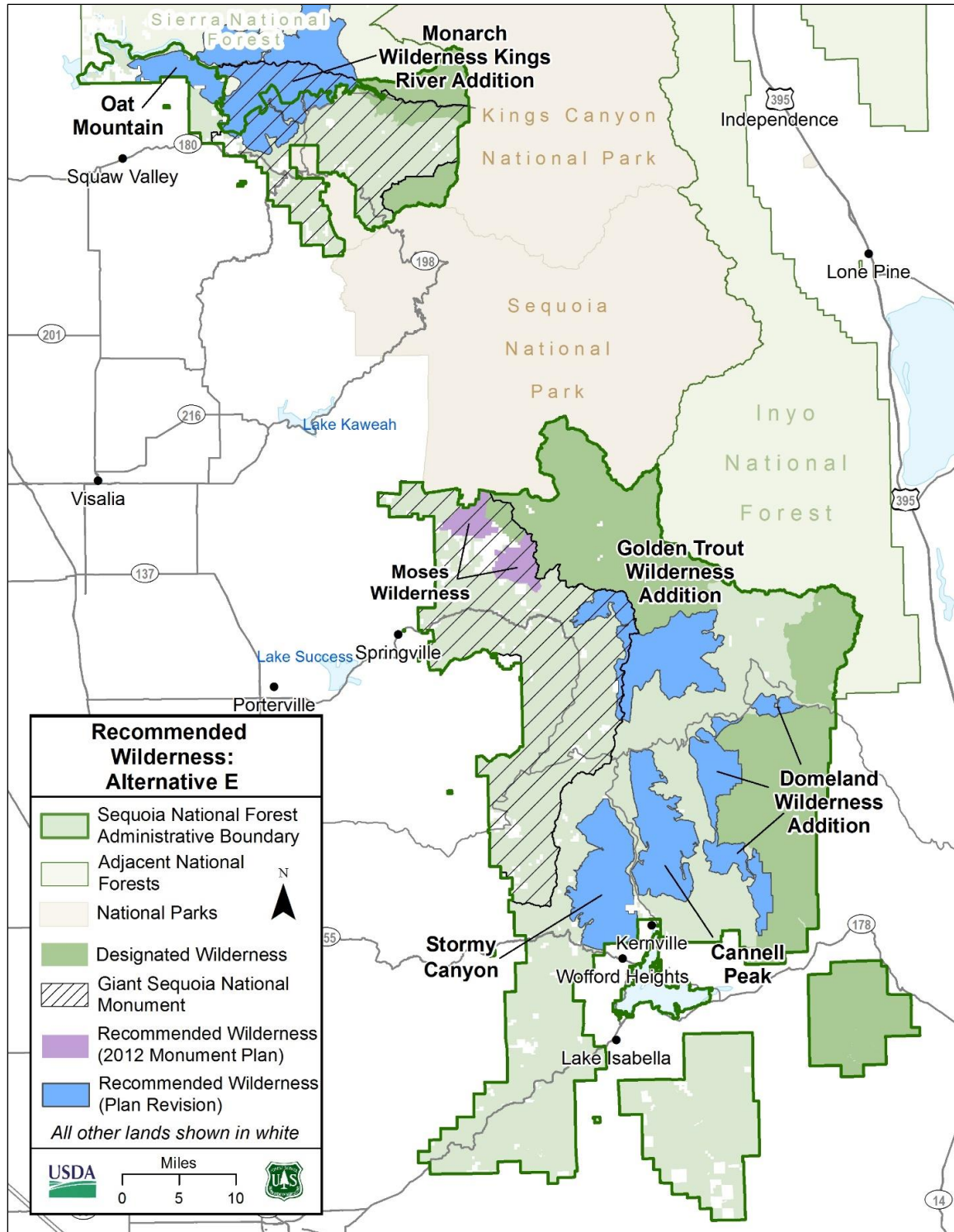
Map B-3. Sierra National Forest areas analyzed as recommended wilderness in alternative C

Table B-4. Sequoia National Forest areas analyzed as recommended wilderness in alternative E

Analysis Polygon Name	Analysis Polygon Acres	Evaluation Polygon Name(s)	Evaluation Polygon Acres	Evaluation Polygon Number(s)
Cannell Peak	30,983	Cannell Peak	39,629	1384
Domeland Wilderness Addition (Portions of Domeland Wilderness Additions - West, Fish Creek Addition, and Evaluation Polygon 1394)	29,192	Domeland/Woodpecker Roadless Area, Adjacent to Domeland Wilderness Woodpecker Roadless, Adjacent to Domeland Wilderness	51,801 7,234	1394 1431
Golden Trout Wilderness Addition (Portions of Golden Trout Wilderness Additions - (1), Southwest, and Evaluation Polygon 1387)	41,430	North Fork Kern - adjacent to Golden Trout Wilderness	89,627	1387
Monarch Wilderness Kings River Addition (Portions of Evaluation Polygon 1378)	14,301	Adjacent to John Muir and Monarch Wildernesses	71,974	1378*
Oat Mountain (Portion of Evaluation Polygon 227)	10,981	Oat Mountain	15,358	227
Stormy Canyon	34,656	Upper Kern Canyon Escarpment-Baker Peak	48,730	1408

* Evaluation Polygon 1378 overlays the boundary between the Sequoia and Sierra National Forests, with portions in each forest. 14,609 acres of the evaluation polygon are administered by the Sequoia National Forest. The analysis area only includes acres within the Sequoia National Forest.

Notes: Names in parentheses indicate the names used in Alternative C B to refer to the same areas. While the Monarch Wilderness Kings River Addition includes lands within both Sierra National Forest and Sequoia Sequoia F, this table only includes lands within the Sequoia National Forest.



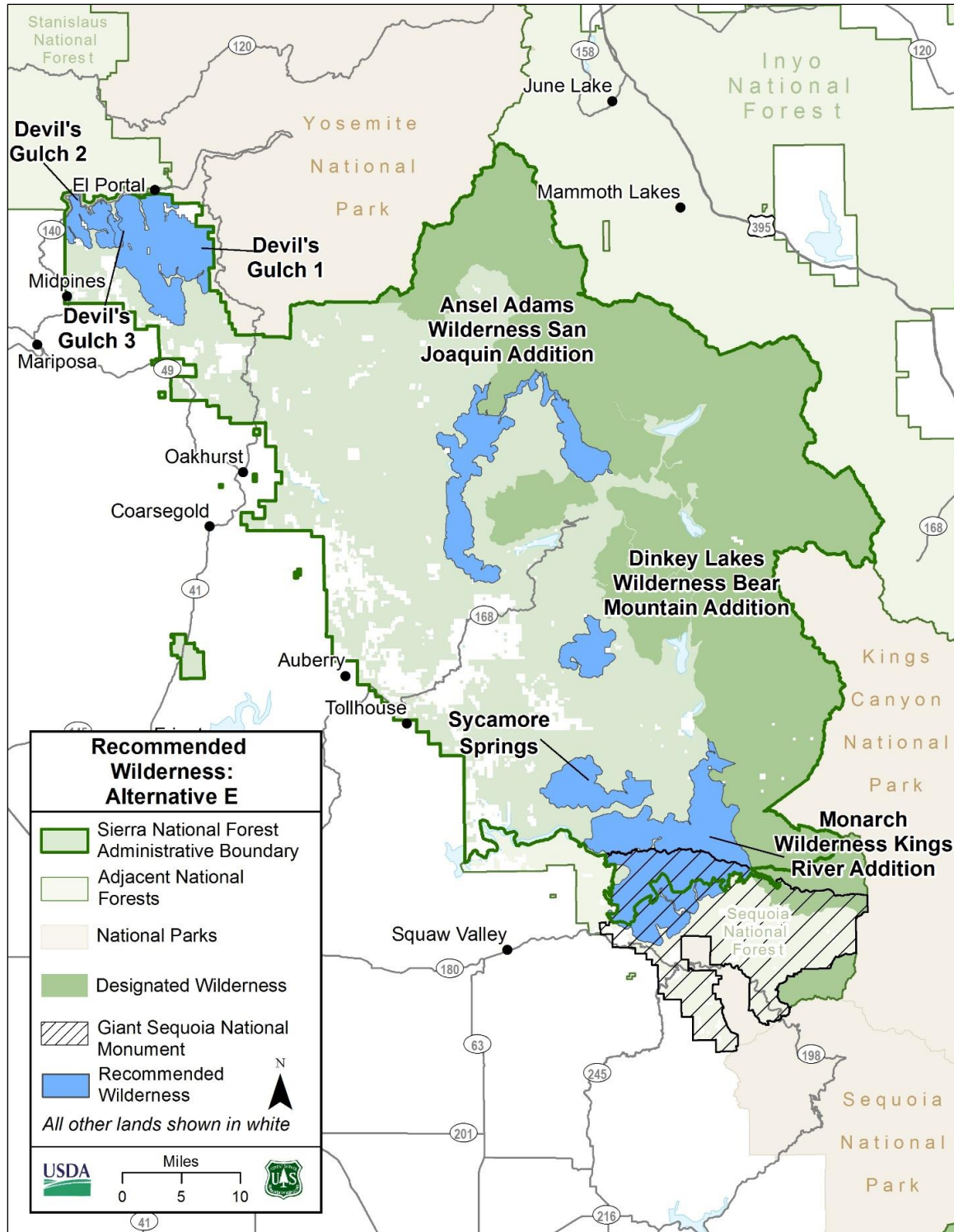
Map B-4. Sequoia National Forest areas analyzed as recommended wilderness in alternative E

Table B-5. Sierra National Forest areas analyzed as recommended wilderness in alternative E

Analysis Polygon Name	Analysis Polygon Acres	Evaluation Polygon Name	Evaluation Polygon Acres	Evaluation Polygon Number
Ansel Adams Wilderness Addition (Ansel Adams Wilderness Addition)	37,057	San Joaquin River, Adjacent to Ansel Adams Wilderness	37,528	819
Devil's Gulch 1 (Devil Gulch)	37,132	Devil Gulch	47,747	772
Devil's Gulch 2 (Ferguson Ridge)	7,729	Devil Gulch	47,747	772
Devil's Gulch 3 (Portion of Evaluation Polygon 772 between Devil Gulch and Ferguson Ridge)	1,286	Devil Gulch	47,747	772
Dinkey Lakes Wilderness Bear Mountain Addition (Bear Mountain)	9,245	Adjacent to Dinkey Lakes Wilderness	48,312	539
Sycamore Springs	15,269	Sycamore Springs	17,908	315
Monarch Wilderness Kings River Addition (Monarch Wilderness Addition - West, John Muir Wilderness Additions - Southwest, and Portions of Evaluation Polygon 1378)	56,356	Adjacent to John Muir and Monarch Wildernesses	71,974	1378*

* Evaluation Polygon 1378 overlays the boundary between the Sequoia and Sierra National Forests, with portions in each forest. 57,364 acres of the evaluation polygon are administered by the Sierra National Forest. The analysis area only includes acres within the Sierra National Forest.

Notes: Names in parentheses indicate the names used in Alternative C B to refer to the same areas. While the Monarch Wilderness Kings River Addition includes lands within both Sierra National Forest and Sequoia Sequoia F, this table only includes lands within the Sierra National Forest.



Map B-5. Sierra National Forest areas analyzed as recommended wilderness in alternative E

Table B-6. Sequoia National Forest wilderness evaluation polygons and portions of polygons not analyzed for recommended wilderness in alternative C

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
18	Southern Paiute Mountains (6,337)	6,337	Historic mining activities and developments substantially affect the appearance of naturalness within the polygon. Authorized motorized trails and authorized motorized access to private land within the polygon, as well as an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within large portions of the polygon.
36	Adjacent to Sequoia-Kings Canyon Wilderness (2,089)	2,089	A high use off-highway vehicle area and an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within most of the polygon.
63	Lower Kern River Gorge (5,223)	5,223	Plantations substantially affect the appearance of naturalness within the eastern portion of the polygon. Authorized motorized trails within the polygon and an extensive network of authorized forest system roads and motorized trails near the boundaries of the polygon, as well as a highway to the east and a paved County road to the south limit opportunities for solitude.
66	Saturday Peak - Greenhorn Roadless (8,289)	113	An authorized motorized trail and a highly developed recreation area limit opportunities for solitude within this portion of the polygon.
73	Lightner Peak - Mill Creek (15,128)	15,128	Plantations substantially affect the appearance of naturalness within the polygon. Authorized motorized trails within the polygon, a highway to the north, and a paved road to the south limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within the polygon.
99	Sunday Peak (9,386)	9,386	Active restoration and fuels reduction treatments substantially affect the appearance of naturalness within portions of the polygon. Authorized motorized trails within the polygon and an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude.
120	Lion Ridge Roadless (6,865)	6,865	Past extensive timber harvest substantially affects the appearance of naturalness within approximately 25 percent of the polygon. Extensive network of authorized forest system roads and private roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within much of the polygon.

Appendix B. Wilderness Recommendation Process

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
160	Slate Mountain (16,126)	122	The Slate Mountain Botanic area and the beauty of the steep mountain make this area a good place to walk in solitude. Motorized use of trails in this area are not allowed. The steep areas block noise of Mountain Road 198.
162	North of Black Mountain (15,806)	12	An authorized forest system road limits opportunities for solitude within this portion of the polygon.
173	South of Wishon (5,307)	5,307	Substantial developments, including power transmission lines, flumes, an aqueduct, tunnels, a dam, and a water weir substantially affect the appearance of naturalness within the polygon. Many of these developments are FERC-licensed facilities for PG&E and SCE, and require motorized access and maintenance with motorized equipment. Network of authorized forest system roads, a highway, and two paved County roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within much of the polygon.
227	Oat Mountain (15,358)	15,358	Active restoration and fuels reduction treatments substantially affect the appearance of naturalness within the southern portion of the polygon. Authorized forest system roads and authorized motorized access to power transmission lines and private land within the polygon, as well as a paved County road, private roads, and a network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Roads within the polygon are used by the public, including off-highway vehicles. High use recreation facilities, including several developed campgrounds and a rental cabin near the boundaries of the polygon also limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within much of the polygon.
1364	North of Coffee Camp (9,203)	9,203	Substantial developments, including a water flume, utility lines, and grazing improvements substantially affect the appearance of naturalness within the polygon. Many of these developments require motorized access and maintenance with motorized equipment. California State Highway 190 and paved County roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within much of the polygon.
1377	Adjacent to Monarch Wilderness (11,559)	6,087	An extensive network of authorized forest system roads limits opportunities for solitude within these portions of the polygon.

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
1378*	Adjacent to John Muir and Monarch Wildernesses (71,974)	26,103 (Note: this number represents acreage on both the Sequoia National Forest and Sierra National Forest)	Approximately 10,217 acres, south of the Kings River, within the Kings River Special Management Area, administered by the Sierra National Forest. Approximately 14,525 acres south of the Kings River, administered by the Sequoia National Forest. Approximately 1,361 acres area north of the Kings River, administered by the Sierra National Forest.
1380	Adjacent to Jennie Lakes Wilderness and Sequoia-Kings Canyon Wilderness (1,316)	1,316	A road that nearly bisects the middle of the polygon, a highly developed recreation area, and a paved highway near the boundaries of the polygon limit opportunities for solitude. The sound of roads fades quickly as you hike away up into these remote areas.
1381	Beartrap Meadow - Adjacent to Sequoia-Kings Canyon Wilderness (1,317)	1,317	A highly developed recreation area, and two paved roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude throughout the polygon.
1384	Cannell Peak (39,629)	12,422	Authorized motorized trails, including the Rincon motorcycle trail, and an extensive network of authorized forest system roads within these portions of the polygon as well as Tulare County Road 99 and high use recreation sites along the boundaries of some portions of the polygon, limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within these portions of the polygon.
1385	Jennie Lakes Roadless – Adjacent to Jennie Lakes Wilderness (8,216)	2,954	This area has a few roads along the edges but is quiet and remote.
1387	North Fork Kern - Adjacent to Golden Trout Wilderness (89,627)	29,993	One national motorized trail is along one boundary. A forest service road that goes to the wilderness boundary bisects the area. A road to a private inholding is also present. However the area is steeply dissected and rises steeply out of the Kern Canyon and is remote. Sights and sounds of motorized use on the Sherman Pass Road are present along one edge of the polygon.
1390	Osa Meadows - Adjacent to Golden Trout Wilderness (1,100)	Most of the	Inventoried roadless area with steep slopes make this area a difficult terrain to traverse. The remote nature of the area limits any motorized sounds.

Appendix B. Wilderness Recommendation Process

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
1391**	Monache, Blackrock, and South Sierra East (17,745)	12,218 (Note: this number represents acreage on both the Sequoia National Forest and Inyo National Forest)	Authorized motorized trails and an authorized forest system road within these portions of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within these portions of the polygon.
1394	Domeland/ Woodpecker Roadless Area - Adjacent to Domeland Wilderness (51,801)	18,318	This has the remoteness of an Inventoried roadless ae and an area protected from much development. The area is steep and sound disapates quickly.
1395	Clicks Creek - Adjacent to Golden Trout Wilderness (2,285)	2,285	Past intensive timber harvest substantially affects the appearance of naturalness within approximately 50 percent of the polygon. Authorized OSV use within the polygon, a road that nearly bisects the polygon, and an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude throughout the polygon.
1397	South of Jordan Peak - Adjacent to Moses Recommended Wilderness (3,104)	3,104	Past intensive timber harvest substantially affects the appearance of naturalness within approximately 50 percent of the polygon. California State Highway 190 and an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude throughout the polygon.
1404	Hatchet Peak (6,068)	9	An authorized forest system road within this portion of the polygon limits opportunities for solitude. Deeply dissected canyons and mountains make this area quiet once away form the forst service or county road. .
1408	Upper Kern Canyon Escarpment - Baker Peak (48,730)	8,273	An extensive network of authorized motorized trails and a network of authorized forest system roads within these portions of the polygon, and an extensive network of authorized forest system roads near the boundaries of these portions of the polygon, limit opportunities for solitude.
1410	Deerwood Meadow (8,494)	8,494	Authorized motorized trails, paved roads, and an extensive network of authorized forest system roads near the boundaries of this polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within the polygon.

Appendix B. Wilderness Recommendation Process

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
1420	Lumreau Creek (6,983)	6,983	Extensive plantations and 8 miles of a double bulldozer line created during fire suppression activities in 2014 substantially affect the appearance of naturalness throughout this polygon. An extensive network of authorized forest system roads near the boundaries of the polygon limits opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within a large portion of the polygon.
1422	Woodward Peak (8,008)	8,008	Active mining claims, with authorized motorized access maintenance with motorized equipment, substantially affect the appearance of naturalness within the polygon. An extensive network of authorized motorized trails within the polygon limits opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within the entire polygon.
1425	Delonegha Creek (14,675)	14,675	An extensive network of authorized motorized trails within the polygon and California State Highway 178 near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within much of the polygon.
1426	Adjacent to Bright Star Wilderness (49,918)	49,918	Numerous areas with mining activity substantially affect the appearance of naturalness. An extensive network of authorized motorized trails within the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within large portions of the polygon. Motorized access and equipment may be required related to mining clean up under CERCLA.
1427	Clear Creek, Paiute Mountains (6,747)	6,747	Authorized restoration treatments and industrial mining activity within the polygon substantially affect the appearance of naturalness. An authorized motorized trail that bisects the polygon limits opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within the polygon. Motorized access and equipment may be required related to mining hazardous materials issues.
1429	Pierce Valley - Adjacent to Sequoia-Kings Canyon Wilderness (2,729)	2,729	Authorized motorized trails and popular off-highway vehicle activities within the polygon and California State Road 469 near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within much of the polygon. A new off-highway vehicle staging area is also in the planning phase with a State funded off-highway vehicle grant.

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
1431	Woodpecker Roadless - Adjacent to Domeland Wilderness (7,234)	3,302	One paved road and an extensive network of authorized forest system roads near the boundaries of these portion of the polygon are present. The noise levels attenuate quickly away from the road.
1432	Blackrock Mountain - Adjacent to Golden Trout Wilderness (1,133)	1,133	An authorized forest system road that nearly bisects the polygon and a network of authorized motorized trails within this polygon limit opportunities for solitude.
1434	Agnew Roadless - Adjacent to Monarch Wilderness (3,726)	3,726	California State Highway 180, Ten Mile Road, and authorized forest system roads near the boundaries of this polygon limit opportunities for solitude. An easement for a water ditch with water rights related to an adjacent private property owner was awarded within the polygon through court order.

* Evaluation Polygon 1378 overlays the boundary between the Sierra and Sequoia National Forests, with portions in each forest. The figures here represent all acres within both forests.

** Evaluation Polygon 1391 overlays the boundary between the Inyo and Sequoia National Forests, with portions in each forest. The figures here represent just the acres within the Sequoia National Forest.

Table B-7. Sierra National Forest wilderness evaluation polygons and portions of polygons not analyzed for recommended wilderness in alternative C

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
304	Cat's Head Mountain (5,916)	5,916	High-use Trimmer Springs Road, motorized boating in Pine Flat Reservoir, and an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude throughout much of the polygon.
330	North Fork Kings River (7,804)	7,804	Several developments, including a paved road, Helms power project, a highly developed recreation area, and motorized boating in Wishon Reservoir as well as authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude throughout much of the polygon.
357	Soaproot (5,374)	5,374	A motorized trail authorized under special use permit within the polygon and a paved road near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude throughout much of the polygon.

Appendix B. Wilderness Recommendation Process

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
441	Bald Mountain (6,892)	6,892	An extensive network of authorized motorized trails within the polygon as well as paved roads and an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude throughout much of the polygon. Fuels reduction treatments are currently authorized in the southern portion of the polygon.
539	Adjacent to Dinkey Lakes Wilderness (48,312)	10,252	Authorized motorized trails within these portions of the polygon and 1,895 acres of surface water within Courtright Reservoir that are authorized for low speed motorized boating limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within these portions of the polygon.
557	Peckinpah Creek (5,073)	5,073	2015 Willow Fire burned approximately 90 percent of this polygon. Authorized motorized trails within the polygon as well as an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this polygon.
577	Adjacent to Kaiser Wilderness (7,127)	7,127	Paved roads, highly developed recreation sites, recreation residences, organization camps, resorts, extremely high use areas, and extensive use of authorized forest system roads near the boundaries of this polygon limit opportunities for solitude. Post-2013 Aspen Fire treatments, including motorized equipment, are currently authorized within this polygon.
586	Graham Mountain (5,412)	5,412	An extensive network of authorized forest system roads and the motorized boating in Bass Lake near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this polygon.
646	Shuteye (18,013)	3,595	Authorized motorized trails within these portions of the polygon and an extensive network of authorized forest system roads near the boundaries of these portions of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within these portions of the polygon. Fuels reduction treatments near Central Camp may continue in the western portion of this polygon.
688	Chiquito Creek (6,515)	6,515	A scenic byway and an extensive network of authorized forest system roads near the boundaries limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this polygon.

Appendix B. Wilderness Recommendation Process

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
772	Devil Gulch (47,747)	2,622	Authorized motorized trails within these portions of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within these portions of the polygon.
781	Adjacent to John Muir Wilderness 1 (2,477)	2,477	High recreation use, including an authorized motorized area, the Dusy-Ershim off-highway vehicle route, with jeeps and other off-road vehicles, as well as the popular Chamberlain Camp recreation site and motorized boating in Wishon Reservoir limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this polygon.
785	Florence Lake (1,254)	1,254	High recreation use activities and developments including the Florence Lake Reservoir, dam, boat ramps, the Florence Lake store, Jackass Meadows Campground, Florence Lake Road, High Sierra pack station, Jackass administrative site, Hooper Diversion primitive road, trailhead parking areas, day use areas, and a penstock, as well as motorized boating limit opportunities for solitude within this polygon. Some of these developments are FERC-licensed facilities for SCE. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this polygon. Only 340 acres are on land, the remainder is composed of the surface water within Florence Lake. A ferry operates under special use permit, traveling the length of the lake several times per day transporting people and providing access to the John Muir Wilderness.
815	Edison Lake (3,887)	3,887	High recreation use, including developed recreation sites, Vermillion Valley Resort, Lake Edison, High Sierra Pack Station, the authorized Onion Springs Primitive Road, and motorized boating within the polygon as well as an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this polygon. A ferry operates under special use permit, traveling the length of the lake several times per day transporting people and providing access to the John Muir Wilderness.
819	San Joaquin River - Adjacent to Ansel Adams Wilderness (37,528)	466	Authorized motorized trails within this portion of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this portion of the polygon.
820	Piyau Dome - Adjacent to Ansel Adams Wilderness (1,741)	1,741	A paved road and an extensive network of authorized forest system roads near the boundaries of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this polygon.

Appendix B. Wilderness Recommendation Process

Evaluation Polygon Number	Evaluation Polygon Name (acres)	Evaluation Polygon or Subpolygon Acres not Analyzed	Rationale Explaining Why Some Areas Were Not Analyzed for Recommended Wilderness
821	Mount Raymond (13,370)	3,592	Authorized motorized trails and authorized motorized access to private property and mines within these portions of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within these portions of the polygon.
822	Adjacent to Ansel Adams Wilderness (10,581)	668	Authorized motorized trails within this portion of the polygon limit opportunities for solitude. Sights and sounds of motorized use are pervasive and limit opportunities for solitude within this portion of the polygon.
1378	Adjacent to John Muir and Monarch Wildernesses (71,974)	26,103 (Note: this number represents acreage on both the Sequoia and Sierra National Forests)	Authorized motorized trails and an extensive network of authorized forest system roads limits opportunities for solitude within these portions of the polygon: Approximately 10,217 acres, south of the Kings River, within the Kings River Special Management Area, administered by the Sierra National Forest. Approximately 14,525 acres south of the Kings River, administered by the Sequoia National Forest. Approximately 1,361 acres area north of the Kings River, administered by the Sierra National Forest.

Detailed Descriptions of Analyzed Areas

Sequoia National Forest

Saturday Peak

8,176 acres, derived from Evaluation Polygon 66.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of Blue Oak woodland ecosystem type.

Location and Description of Recommended Boundary

In the southwestern most portion of the Sequoia National Forest (Map B-6). The west and southwest boundaries generally follow private land. The south and southeast boundaries generally follow the Kern River. The north boundary is set back from the Oak Flat fire lookout, overnight recreational rental, and nearby authorized motorized trails.

General Geography, Topography, and Vegetation

Mountainous canyon area along the north side of the lower Kern River Gorge with elevations between approximately 900 feet and 4,500 feet. Vegetation is composed primarily of annual grassland with areas of blue oak woodland, live oak woodland, and chaparral.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Relatively intact stand of blue oak woodland.

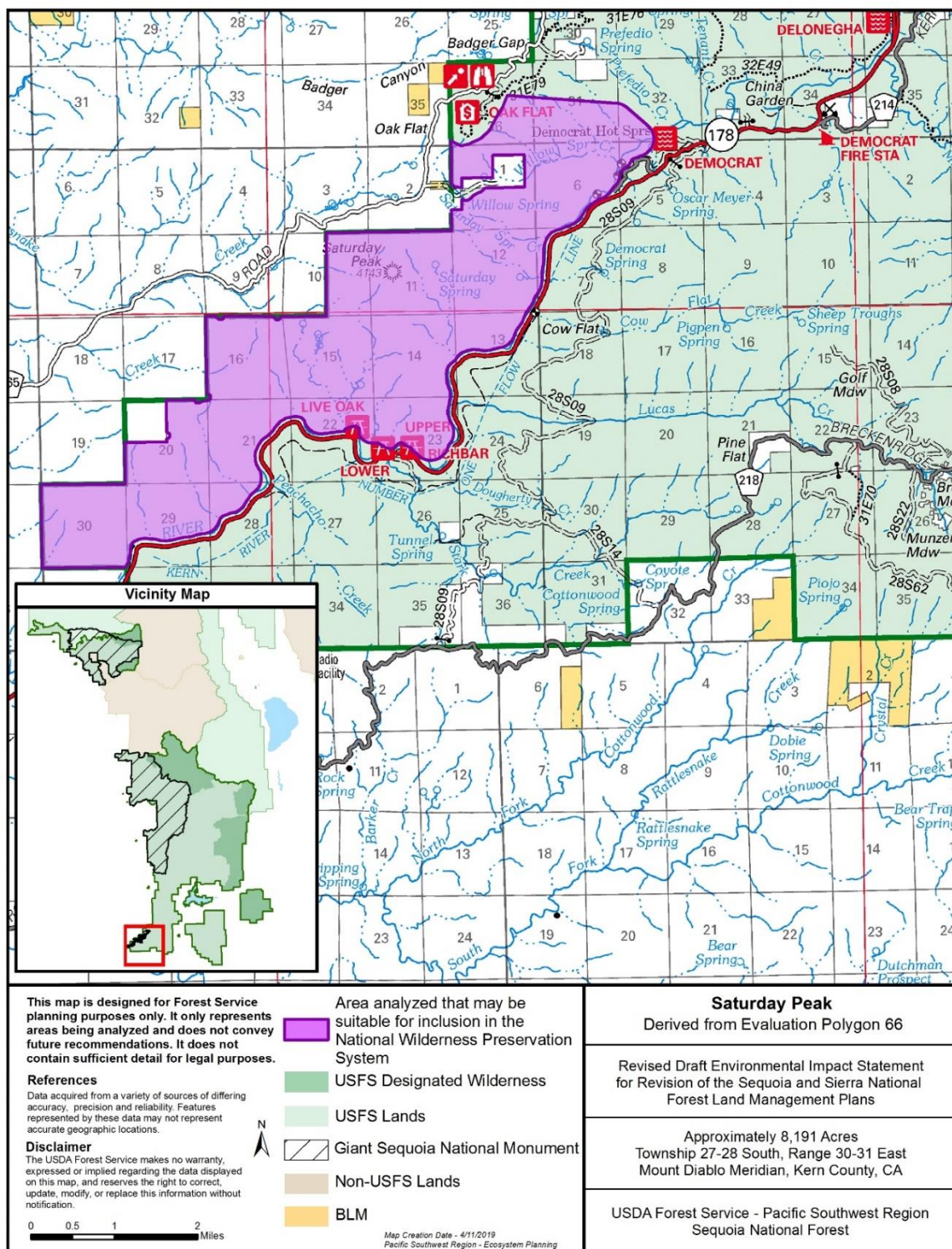
Social: Public interest.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Minor developments, primarily related to Oak Flat Grazing Allotment activities and infrastructure, but overall, appears natural.
Solitude or Primitive and Unconfined Recreation	Sights and sounds from Highway 178, outside the south and southeast boundaries, penetrate most of the area. Limited opportunities for solitude or primitive and unconfined recreation.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Relatively intact stand of Blue Oak woodland.
Manageability	Approximately 90 percent of the area is inventoried roadless area. Approximately 26 percent of Greenhorn Creek Inventoried Roadless Area is within the area. Adjacent lands are private or managed by the Forest Service, with Highway 178 and several developed day use recreation sites along the Kern River, as well as motorized recreation and an overnight recreation rental in the Oak Flat area. Power transmission line is located outside the western boundary.

Current Uses

Approximately 90 percent of the area is inventoried roadless area. Approximately 26 percent of Greenhorn Creek Inventoried Roadless Area is within the area. Very lightly visited, mainly by hunters in the fall. Grazing occurs within the area.



Map B-6. Saturday Peak area analyzed as recommended wilderness in alternative C

Slate Mountain

16,004 acres, derived from Evaluation Polygon 160.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for solitude and primitive and unconfined recreation.

Location and Description of Recommended Boundary

Near the northeast corner of the Tule River Indian Reservation and includes Slate Mountain (Map B-7). The boundary generally follows National Forest System roads, Tulare County Road 107 (Western Divide Highway), California State Highway 190, private land (including communities of Camp Nelson and Cedar Slope), and the Tule River Indian Reservation boundary. The boundary is set back from Belknap and Quaking Aspen campgrounds, Quaker Camp, and the Forest Service Peppermint heliport.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 4,600 feet and 9,300 feet. Vegetation is composed primarily of mixed conifer, Giant Sequoia groves, and subalpine areas near Slate Mountain.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Giant Sequoia groves. Slate Mountain Botanical Area.

Social: Public interest. Opportunities for solitude and primitive and unconfined recreation.

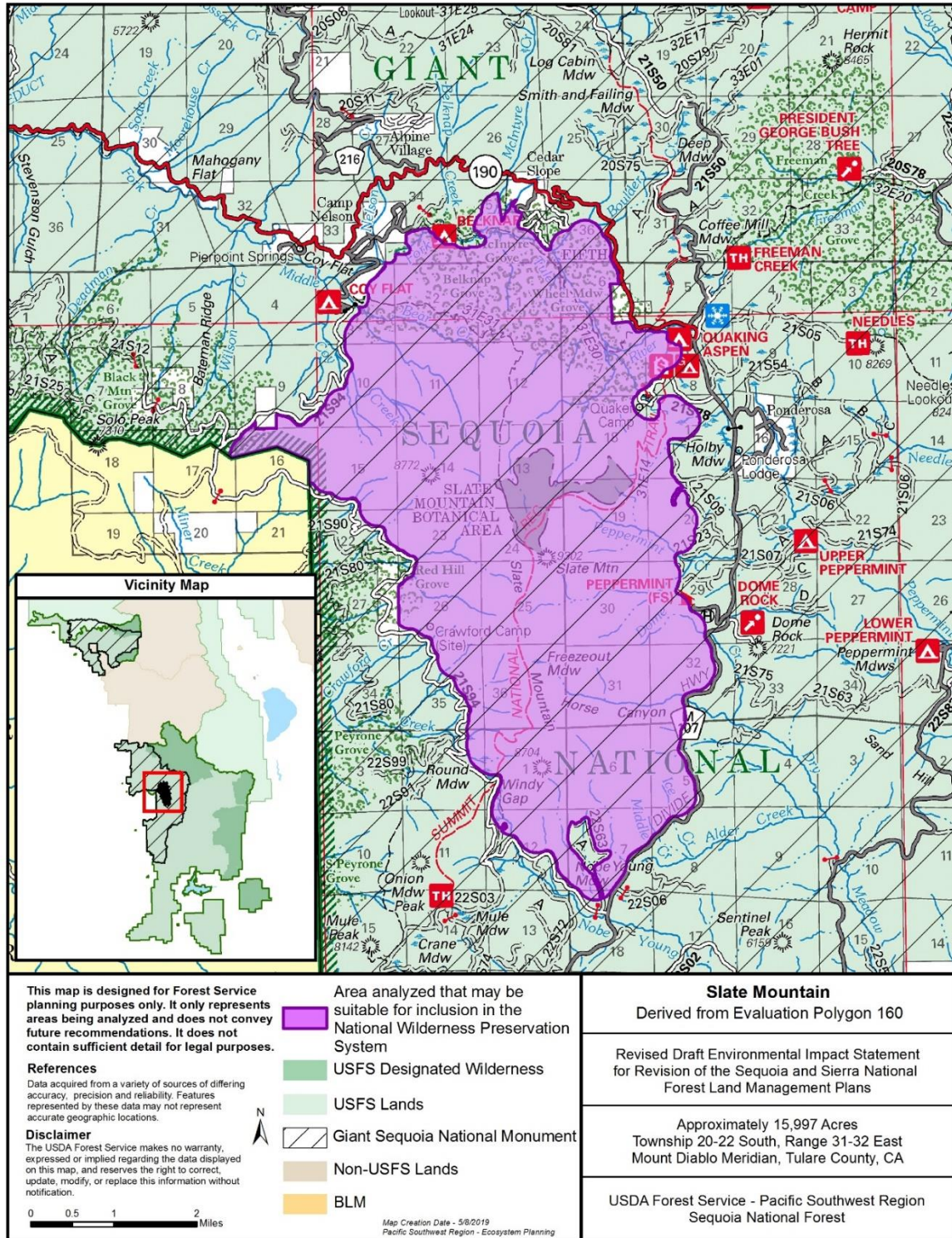
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Area has been affected by human intervention. There is a historic lookout cabin on Slate Mountain that is not maintained. Power transmission lines exist within the area. Grazing occurs in the southern portion (about 25 percent of the total acreage), mostly in meadows, with fences and water troughs. Some non-native fish are stocked within the area. Fire suppression activities have led to dense stands of shade tolerant species throughout the entire area. About 5 percent of the total acreage has been logged. Associated road beds and plantations are visible. The majority of the area is undeveloped. Access roads from previous management are not obtrusive.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist in most of the area, but are limited in areas near the boundary where motorized use, as well as developed and undeveloped recreation, occur just outside the boundary. Sights and sounds from highway corridors is limited and would likely not impact opportunities for solitude. Sights and sounds from fire suppression related helicopter overflights and use of Forest Service Peppermint heliport outside the east boundary may seasonally impact opportunities for solitude. The Summit National Recreation Trail and Forest Service Trail 31E31 bisect the area and provide good access for recreation. Overnight camping is uncommon, although it generally occurs during hunting season.

Characteristic	Description
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Giant Sequoia groves. Scenic views of Slate Mountain, rock outcrops. Slate Mountain Botanical Area.
Manageability	Entirely within Giant Sequoia National Monument. Approximately 77 percent of the area is inventoried roadless area. Slate Mountain Inventoried Roadless Area is almost entirely within the area. Slate Mountain Botanical Area is entirely within the area. Adjacent lands are private, including three small communities, or managed by the Forest Service or Tule River Indian Reservation. Forest Service heliport outside the eastern boundary. Adjacent highway corridors outside the north and east boundaries provide access to the area as well as Giant Sequoia National Monument. Controlling motorized use within the unit would be difficult in areas adjacent to roads, due to the number of access points and the difficulty in patrolling.

Current Uses

Entirely within Giant Sequoia National Monument. Approximately 77 percent of the area is inventoried roadless area. Slate Mountain Inventoried Roadless Area is almost entirely within the area. Slate Mountain Botanical Area is also entirely within the area. Grazing occurs in the southern portion (about 25 percent of the total acreage). Some non-native fish are stocked within the area. Summit National Recreation Trail bisects the area and allows mountain bike use. Motorized use is limited to a snowmobile route over a small portion of the east side. Four Forest Service system roads are under special use permits associated with adjacent private land.



Map B-7. Slate Mountain area analyzed as recommended wilderness in alternative C

Long Canyon

15,794 acres, derived from Evaluation Polygon 162.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for primitive and unconfined recreation.

Location and Description of Recommended Boundary

North of the Tule River Indian Reservation and south of California State Highway 190 (Map B-8). The north boundary generally follows Highway 190 and private land (including the community of Camp Nelson). The west boundary and a portion of the south boundary generally follow private land and the Tule River Indian Reservation boundary. The remainder of the boundary generally follows National Forest System roads and private land. The boundary is set back from Coy Flat Campground.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 1,500 feet and 6,400 feet. Vegetation is composed primarily of chaparral, oak woodlands, and mixed conifers. A small portion of the Black Mountain Giant Sequoia Grove is within the southern boundary.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Giant Sequoia grove. A number of rare and important species such as Western Pond Turtle, Delphinium, and Kaweah brodiaea.

Social: Public interest. Opportunities for primitive and unconfined recreation.

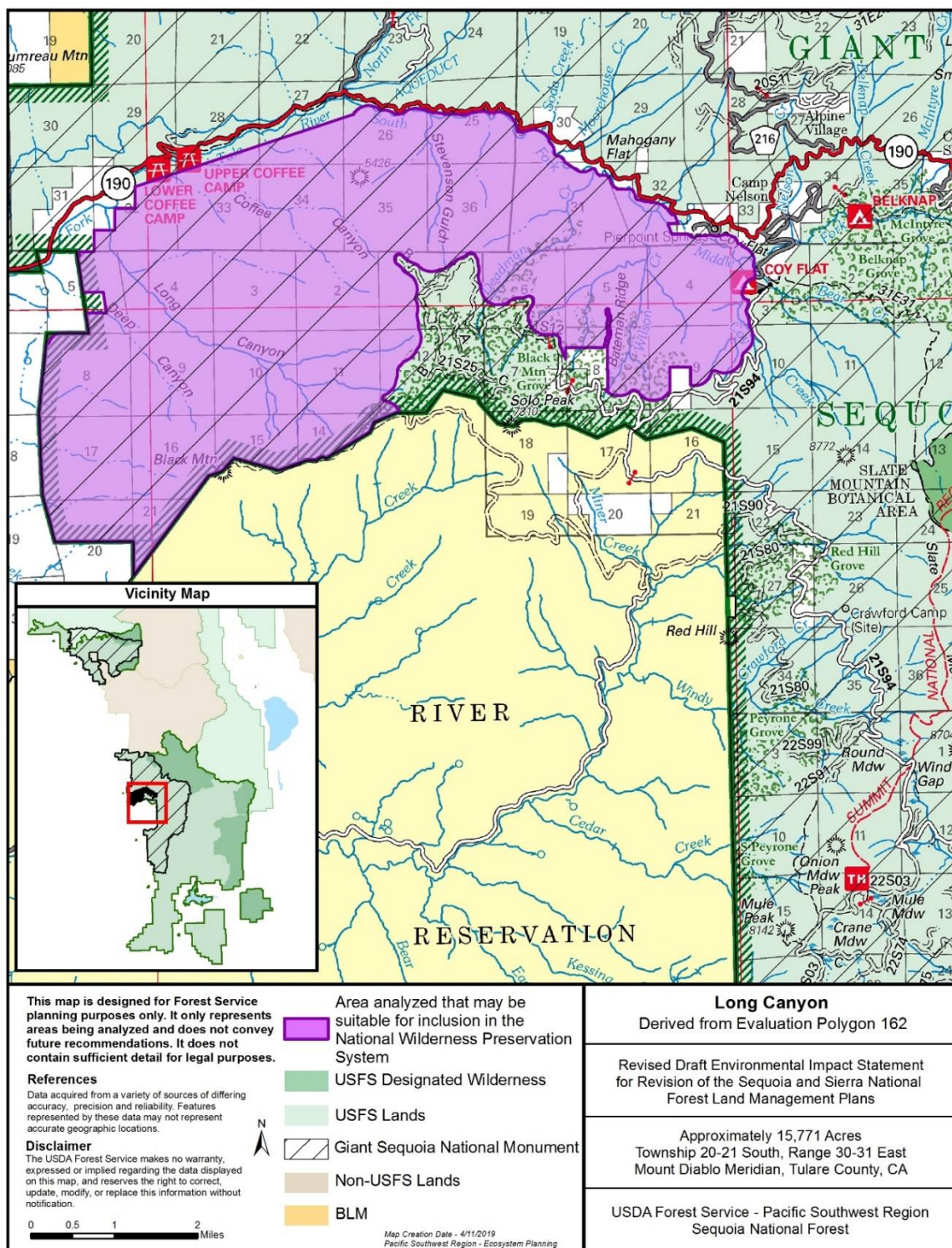
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	An old, non-system road leads from Coy Flat Campground, just outside the east boundary, to two historic mines within the area. Tule River Indian Reservation access road to Black Mountain crosses the boundary into the area in several places. Grazing occurs in two allotments (about two-thirds of the total acreage), with fences and water troughs. Non-native species include fish and several plant species. Fire suppression activities have led to dense stands of shade tolerant species throughout the entire area. Only 1 percent of the total acreage has been impacted by historic logging. Limited overgrown road beds from past forest activities. The area is largely undeveloped.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist in some of the area, but are limited in areas near the boundary where motorized use, as well as developed recreation, occur just outside the boundary. Several old trails once accessed the area but are not longer maintained. Interior of the area may be accessible by cross-country hiking, which would be difficult due to dense stands of shrubs and steep terrain. Sounds from Highway 190 and developed recreation areas can be heard within the interior of the area.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.

Characteristic	Description
Other Features of Value	Marble outcrops and travertine formations. Giant Sequoia grove. A number of rare and important species such as Western Pond Turtle, Delphinium, and Kaweah brodiaea. Important cultural resource sites are located within the area, as it is adjacent to the Tule River Indian Reservation.
Manageability	Approximately 94 percent of the area is inventoried roadless area. Approximately 98 percent of Black Mountain Inventoried Roadless Area is within the area. Entirely within Giant Sequoia National Monument. Adjacent lands are private or managed by the Forest Service or Tule River Indian Reservation. Adjacent highway corridor outside the north boundary provides access to the area as well as Giant Sequoia National Monument. Controlling motorized use within the area would be difficult in areas adjacent to roads, due to the number of access points and the difficulty in patrolling.

Current Uses

Approximately 94 percent of the area is inventoried roadless area. Approximately 98 percent of Black Mountain Inventoried Roadless Area is within the area. Entirely within Giant Sequoia National Monument. Grazing occurs in two allotments (about two-thirds of the total acreage). Two Forest Service system roads are under special use permits associated with adjacent private property parcels.



Map B-8. Long Canyon area analyzed as recommended wilderness in alternative C

Dennison Peak

7,100 acres, derived from Evaluation Polygon 190.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Contiguous with the Moses Recommended Wilderness.
- Opportunities for solitude.

Location and Description of Recommended Boundary

Near the southwestern most portion of the Sequoia National Park (Map B-9). The north boundary and a portion of the east boundary generally follow the Sequoia National Park boundary. A portion of the north boundary generally follows Bureau of Land Management land. The remainder of the north boundary and a portion of the south boundary generally follow private land. The remainder of the boundary follows National Forest System roads and Tulare County Road 276.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 3,300 feet and 8,500 feet. Vegetation is composed primarily of chaparral, oak woodlands, and mixed conifers. A small portion of the Dillonwood and Dennison Giant Sequoia Groves are within the east and north boundaries, respectively.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Giant Sequoia groves.

Social: Public interest. Opportunities for solitude.

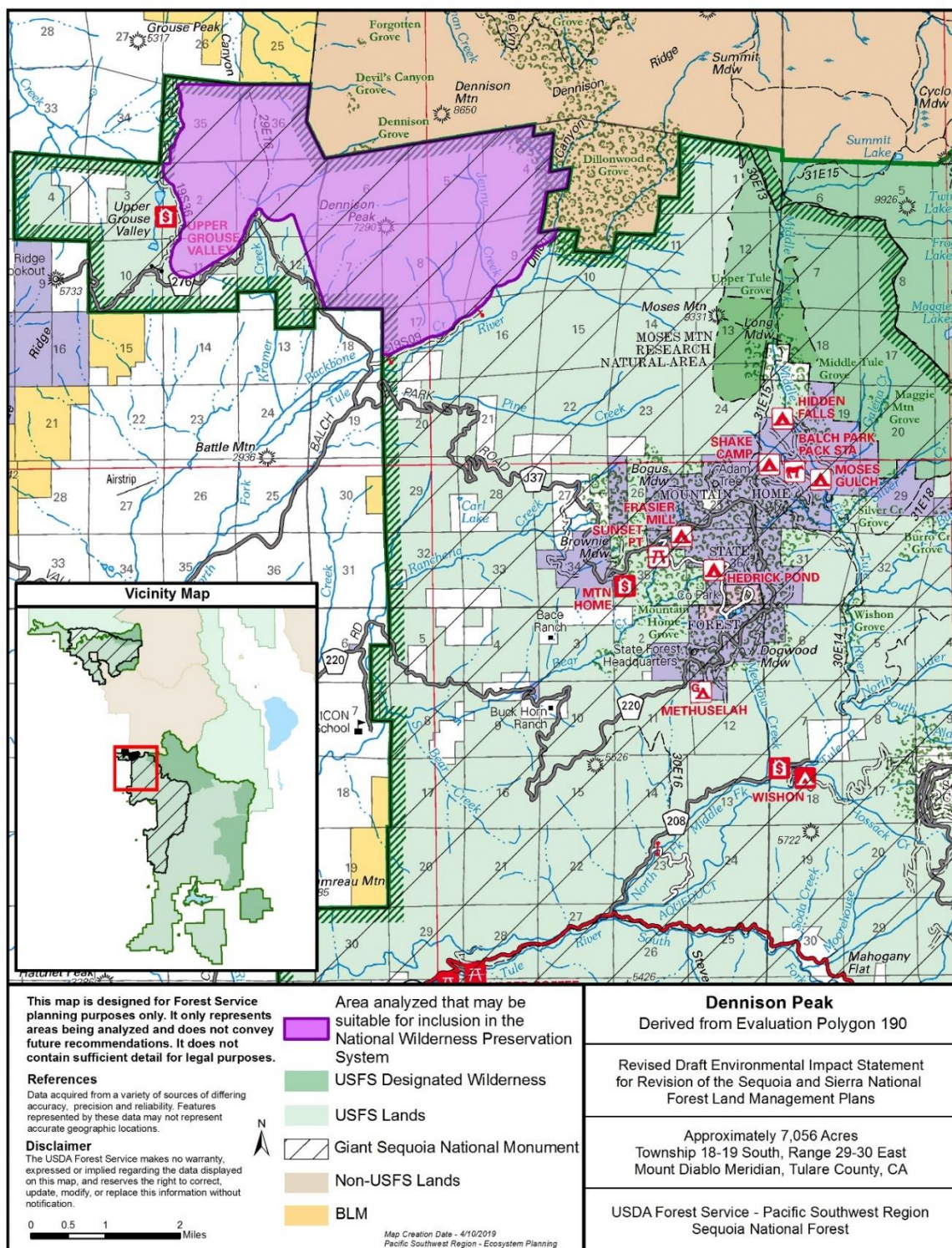
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Area has been affected by human intervention. Grazing occurs on about half of the total acreage, with fences and water troughs. There is one noticeable mine within the area and possibly others that are not noticeable. There are two minor structures associated with the mine but they are not maintained. Non-native species include wild pigs and several plant species. Fire suppression activities have led to dense stands of shade tolerant species and dense understory across approximately half of the area.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude are high. While some areas within the interior are screened from sight, views of private property, roads and the San Joaquin valley development is frequent at higher elevations. There may be some opportunities for primitive and unconfined recreation. Approximately half the area is covered with dense vegetation (shrub fields). Cross-country hiking would be difficult in areas with dense, impenetrable vegetation. The eastern portion of the unit is very steep and rugged and difficult to traverse.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Prehistoric/historic sites and trails. Scenic granite outcrops. Giant Sequoia groves.

Characteristic	Description
Manageability	Approximately 87 percent of the area is inventoried roadless area. Dennison Peak Inventoried Roadless Area is almost entirely within the area. Entirely within Giant Sequoia National Monument. Adjacent to Sequoia National Park and Moses Recommended Wilderness area recommended in the Giant Sequoia National Monument Plan Record of Decision, which is adjacent to the Golden Trout Wilderness. Adjacent lands are private or managed by the Forest Service or Bureau of Land Management. Paved Tulare County Road 276 is immediately adjacent. Controlling motorized use within the area would be difficult in areas adjacent to roads, due to the number of access points and the difficulty in patrolling.

Current Uses

Approximately 87 percent of the area is inventoried roadless area. Dennison Peak Inventoried Roadless Area is almost entirely within the area. Entirely within Giant Sequoia National Monument. There are two special use permitted water lines within the area. Grazing occurs on about half the acreage. A little recreation use occurs within the area.



Map B-9. Dennison Peak area analyzed as recommended wilderness in alternative C

Monarch Wilderness Addition – South

5,472 acres, derived from Evaluation Polygon 1377.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along the south boundary of the Monarch Wilderness and also contiguous with the west boundary of the Kings Canyon National Park and the Sequoia-Kings Canyon Wilderness (Map B-11 and Map B-11). The north boundary generally follows the Monarch Wilderness boundary. The east boundary generally follows the Monarch Wilderness and Kings Canyon National Park boundaries. The remainder of the boundary generally follows National Forest System roads and trails.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 4,900 feet and 8,700 feet. Vegetation is composed primarily of mixed conifer and Giant Sequoia groves.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Giant Sequoia groves.

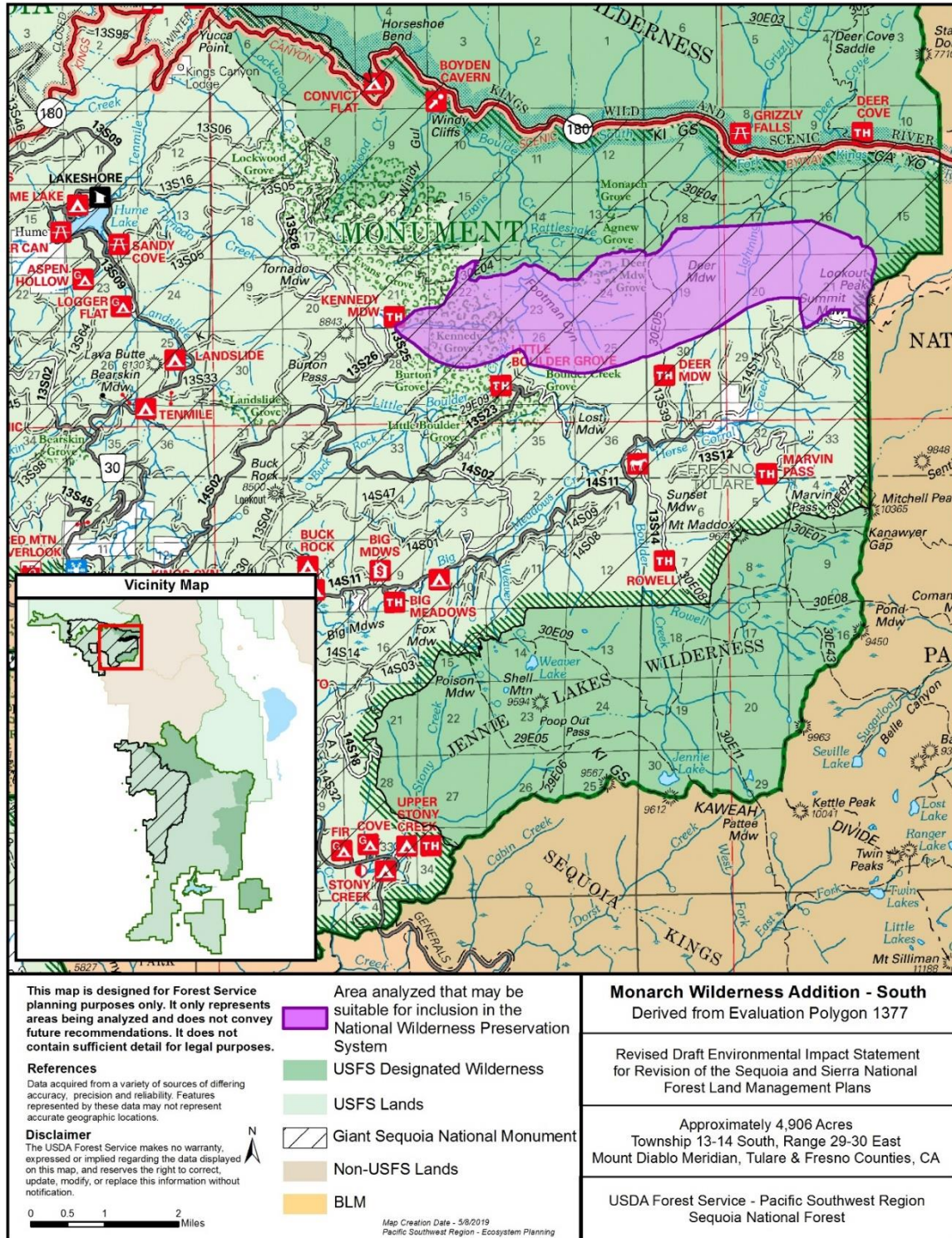
Social: Public interest. Opportunities for solitude and primitive and unconfined recreation. Contiguous with designated wilderness.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

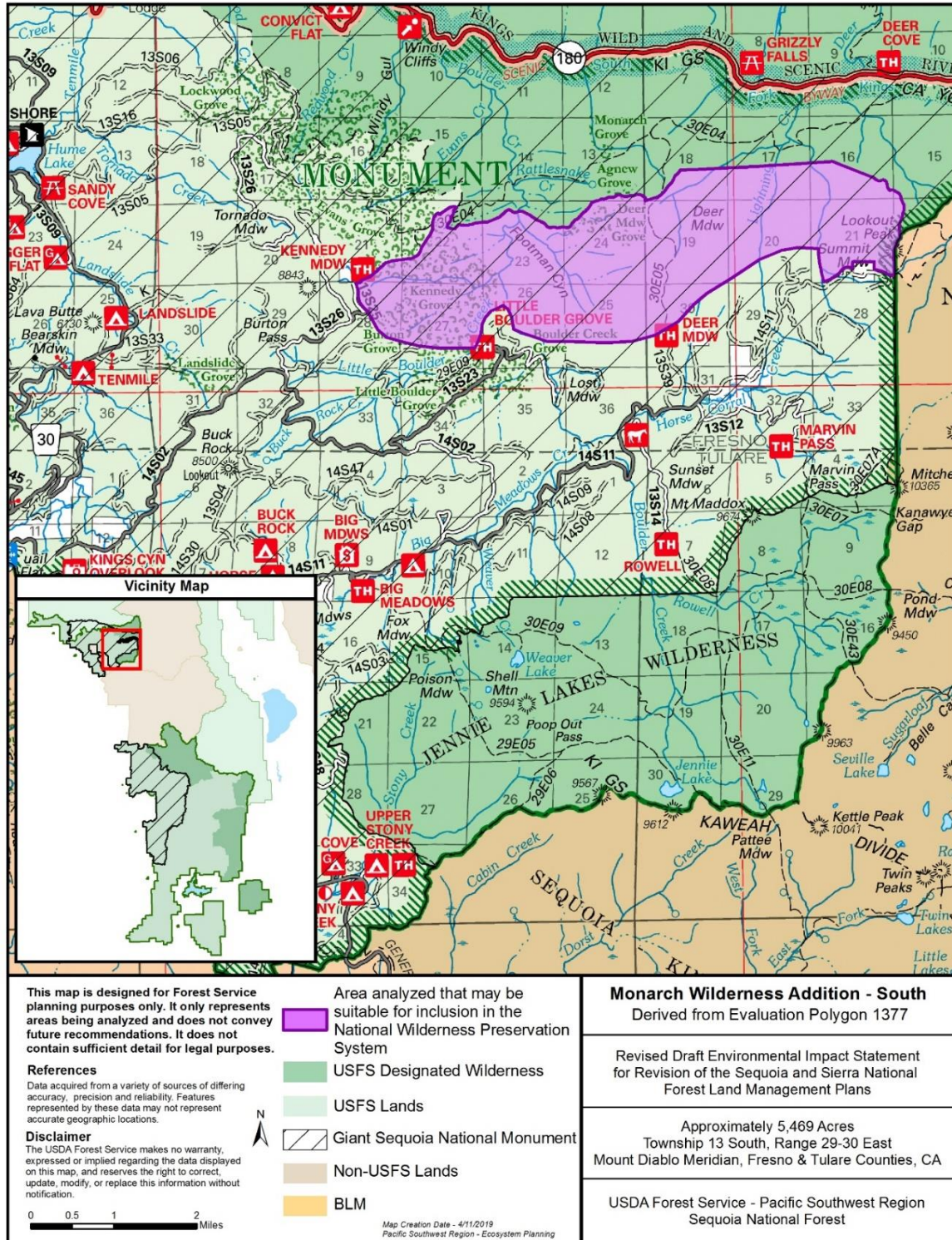
Characteristic	Description
Naturalness	Ecological integrity is largely intact, and there has been little human impact to natural plant, wildlife, watershed, and soils conditions. Overall character appears natural, shows very little indication of intrusion by humans.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude exist. The area is very lightly used for recreation.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Giant Sequoia groves. Highly scenic.
Manageability	Approximately 88 percent of the area is inventoried roadless area. Approximately 50 percent of Agnew Inventoried Roadless Area is within the area. Entirely within Giant Sequoia National Monument. All adjacent lands are managed by the Forest Service or the National Park Service and some lands are designated wilderness. Manageable as an extension of existing designated wilderness.

Current Uses

Approximately 88 percent of the area is inventoried roadless area. Approximately 50 percent of Agnew Inventoried Roadless Area is within the area. Entirely within Giant Sequoia National Monument. The area is very lightly used for recreation.



Map B-10. Monarch Wilderness Addition South area analyzed as recommended wilderness in alternative B



Map B-11. Monarch Wilderness Addition South area analyzed as recommended wilderness in alternative C

Cannell Peak

27,208 acres, derived from Evaluation Polygon 1384.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.

Location and Description of Recommended Boundary

Northeast of Kernville and east of Tulare County Road 99 and the Kern River (Map B-12 and Map B-13). The west boundary generally follows County Road 99, Rincon motorized trail (33E23), and private land. The north boundary generally follows National Forest System Road 22S05. The south boundary and a portion of the east boundary generally follows Cannell Meadow National Recreation Trail. The remainder of the boundary generally follows National Forest System roads (including 24S56, 24S56B, 24S38, 23S13, and 22S12).

General Geography, Topography, and Vegetation

Extends from approximately 2,900 feet (Kern River Canyon) up steep slopes to the Kern Plateau and a maximum elevation of 9,469 feet (Cannell Peak). Vegetation is composed primarily of brush fields at lower elevations, open stands of oak and pine at middle elevations, and open pine stands adjacent to huge open grassy meadows at higher elevations.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of ecosystem types. Stands of endemic Piute cypress. Large, open, wet meadows of the Kern Plateau provide prime habitat for several species of salamanders and the mountain yellow-legged frog.

Social: Public interest. Opportunities for solitude and primitive and unconfined recreation.

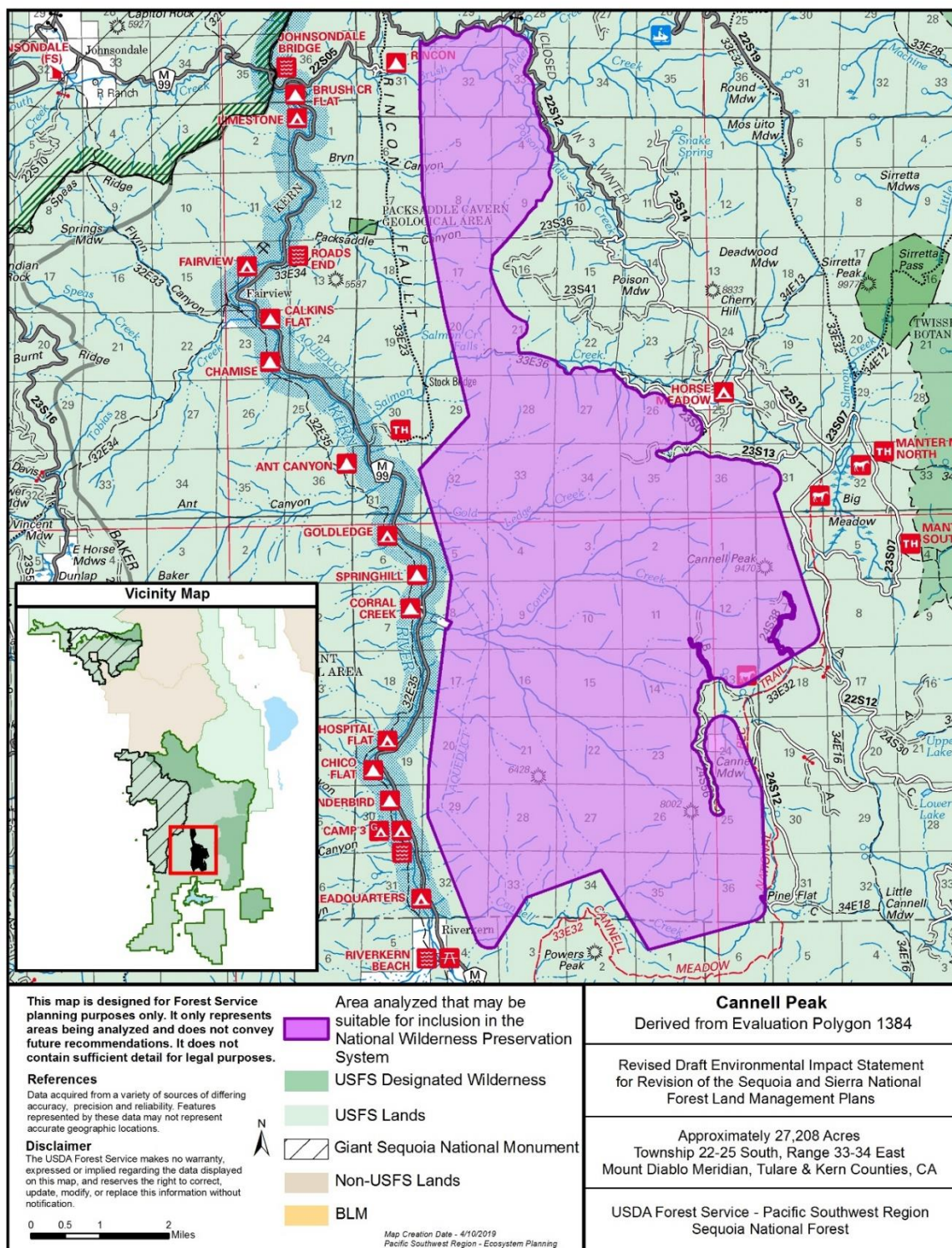
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Majority is unaffected by human intervention. Appears natural and undisturbed. Evidence of logging and exploratory mining are not noticeable. Grazing occurs. Hydroelectric impoundment along Salmon Creek
Solitude or Primitive and Unconfined Recreation	No developed recreation, but opportunities for solitude are limited near the northwest boundary where developed and undeveloped recreation use is very high just outside the boundary along the North Fork Kern River and near the southwest boundary where motorized use occurs just outside the boundary on the Cannell Meadow National Recreation Trail. Opportunities for solitude exist upslope from the Kern River and on the Kern Plateau, even during peak recreation use in the summer. Sights and sounds of military training overflights are common and limit opportunities for solitude. Hiking, backpacking, equestrian use, particularly near the open grassy meadows on Kern Plateau.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.

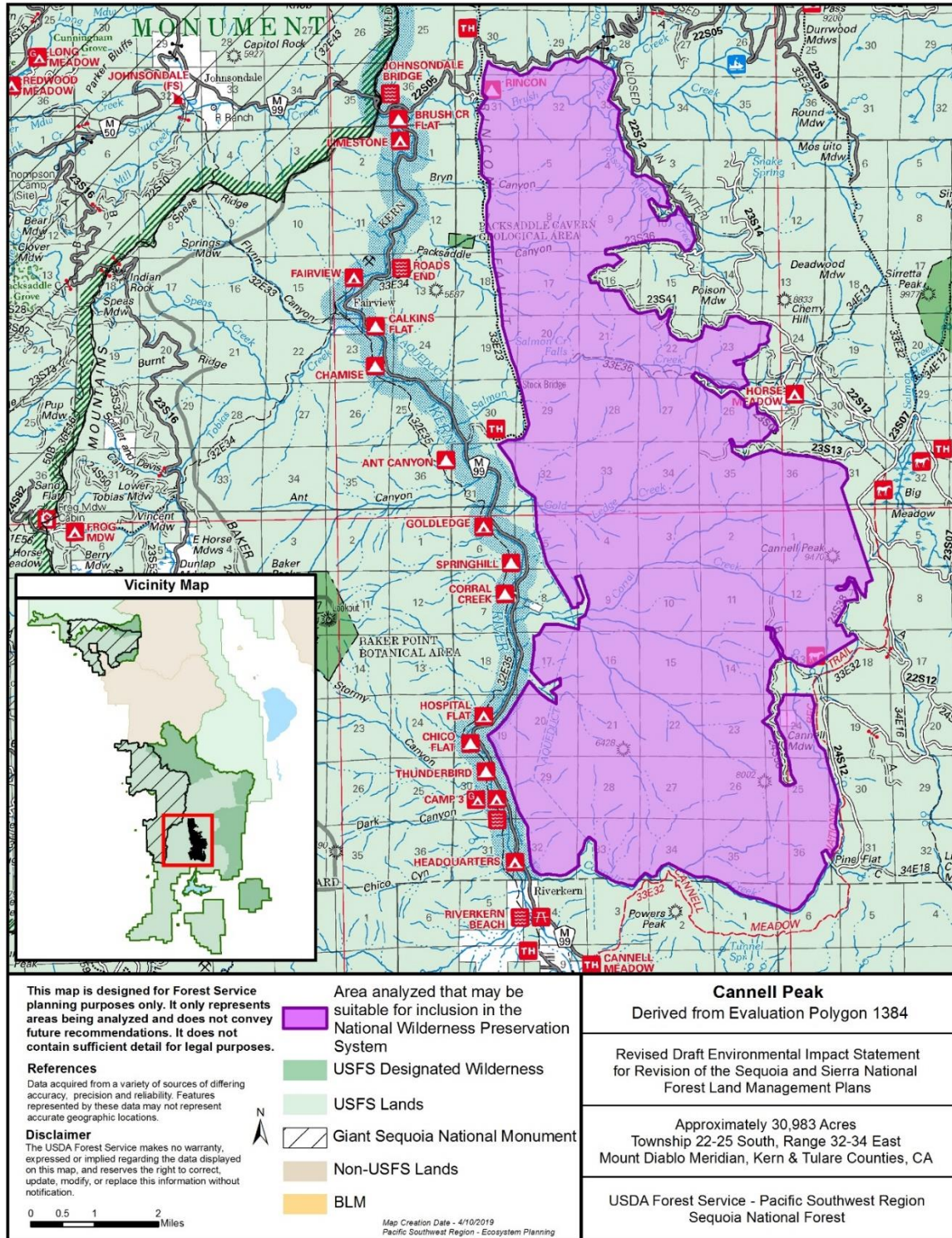
Characteristic	Description
Other Features of Value	Stands of endemic Piute cypress. Large, open, wet meadows of the Kern Plateau provide prime habitat for several species of salamanders and the mountain yellow-legged frog. Rich archeological history, used extensively by the Tubatulabal Tribe.
Manageability	Approximately 79 percent of the area is inventoried roadless area. Approximately 48 percent of Cannell Inventoried Roadless Area is within the area. Adjacent lands are private or managed by the Forest Service. A few access roads and an aqueduct are authorized under special use permits exist just outside the southwest boundary.

Current Uses

Approximately 79 percent of the area is inventoried roadless area. Approximately 48 percent of Cannell Inventoried Roadless Area is within the area. Grazing occurs within the area. Hydroelectric impoundment along Salmon Creek. Hiking trail that accesses Salmon Creek Falls. Hiking, backpacking, equestrian use, particularly near the open grassy meadows on Kern Plateau. Snowmobile trails on Kern Plateau groomed in winter. Community interest in building new off highway vehicle routes across and through the Kern Plateau is increasing.



Map B-12. Cannell Peak area analyzed as recommended wilderness in alternative C



Map B-13. Cannell Peak area analyzed as recommended wilderness in alternative E

Jennie Lakes Wilderness Addition

5,263 acres, derived from Evaluation Polygon 1385.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along the north boundary of the Jennie Lakes Wilderness and also contiguous with the west boundary of Kings Canyon National Park and the Sequoia-Kings Canyon Wilderness (Map B-14). The east boundary follows the Kings Canyon National Park boundary. The south boundary generally follows the Jennie Lakes Wilderness boundary. The remainder of the boundary follows National Forest System roads, section boundaries, and private land. The boundary is set back from Marvin Pass, Roswell, and Big Meadows trailheads as well as Big Meadows campground.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 6,900 feet and 10,300 feet. Vegetation is composed primarily of mixed conifer forests interspersed with meadows and streams.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

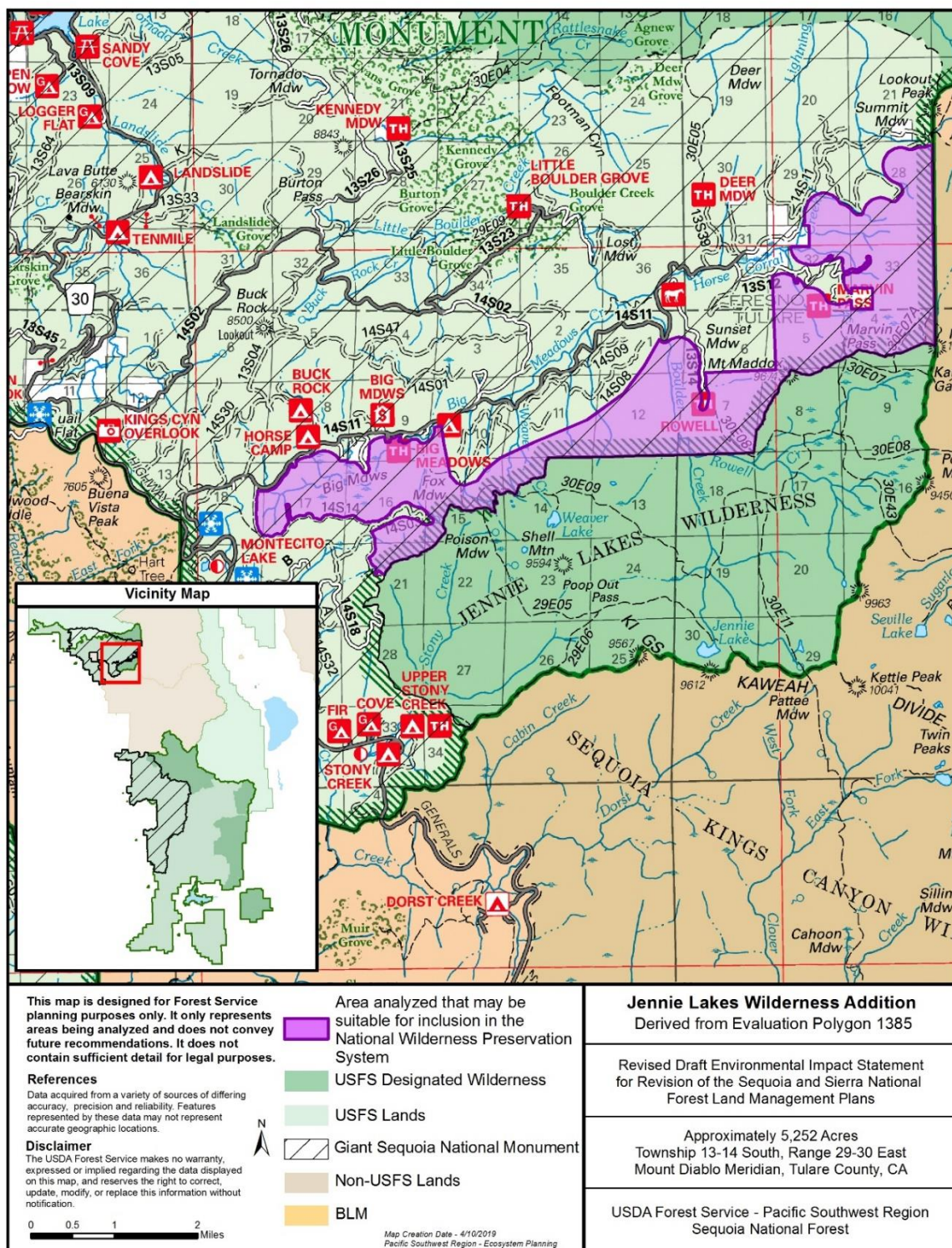
Social: Public interest. Contiguous with designated wilderness.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Plant and animal community composition is intact. Evidence of logging and fuels management is noticeable in some areas. Grazing occurs.
Solitude or Primitive and Unconfined Recreation	Sights and sounds from adjacent roads and developed undeveloped recreation are screened by steep topography and trees in much of the area, but limit opportunities for solitude and primitive and unconfined recreation in some areas. Three hiking and horse riding trails lead to Jennie Lakes Wilderness.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Rich in prehistoric Native American archaeological sites associated with trade trails.
Manageability	Approximately 38 percent of the area is inventoried roadless area. Approximately 80 percent of Jennie Lake Inventoried Roadless Area and 1 percent of Agnew Inventoried Roadless Area are within the area. Entirely within Giant Sequoia National Monument. Adjacent lands are private or managed by the Forest Service or the National Park Service, with several heavily used developed and undeveloped recreation areas along Big Meadows Road, including campgrounds, recreation rental, trailheads, pack station, and Sequoia High Sierra Camp.

Current Uses

Approximately 38 percent of the area is inventoried roadless area. Approximately 80 percent of Jennie Lake Inventoried Roadless Area and 1 percent of Agnew Inventoried Roadless Area are within the area. Entirely within Giant Sequoia National Monument. Grazing occurs within the area. Hiking and horse riding.



Map B-14. Jennie Lakes Wilderness Addition area analyzed as recommended wilderness in alternative C

Golden Trout Wilderness Additions (1)

3,488 acres, derived from Evaluation Polygon 1387.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the south boundary of the Golden Trout Wilderness, just south of Soda Creek and north of Lion Meadows (Map B-15 and Map B-19). The north boundary follows the Golden Trout Wilderness boundary. The remainder of the boundary generally follows National Forest System roads and areas with motorized trails.

General Geography, Topography, and Vegetation

Mountainous area on the Kern Plateau with elevations between approximately 5,000 feet and 8,800 feet. Vegetation is composed primarily of montane or upper montane vegetation. Trees are spread out due to the dry area. Conifers are present and red fir is at higher elevations.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: This area is a headwater to the Kern River and Soda Creek. This area will hold native Kern River rainbow trout in the next 2 to 10 years. The value of clean water for these fish downstream is immeasurable.

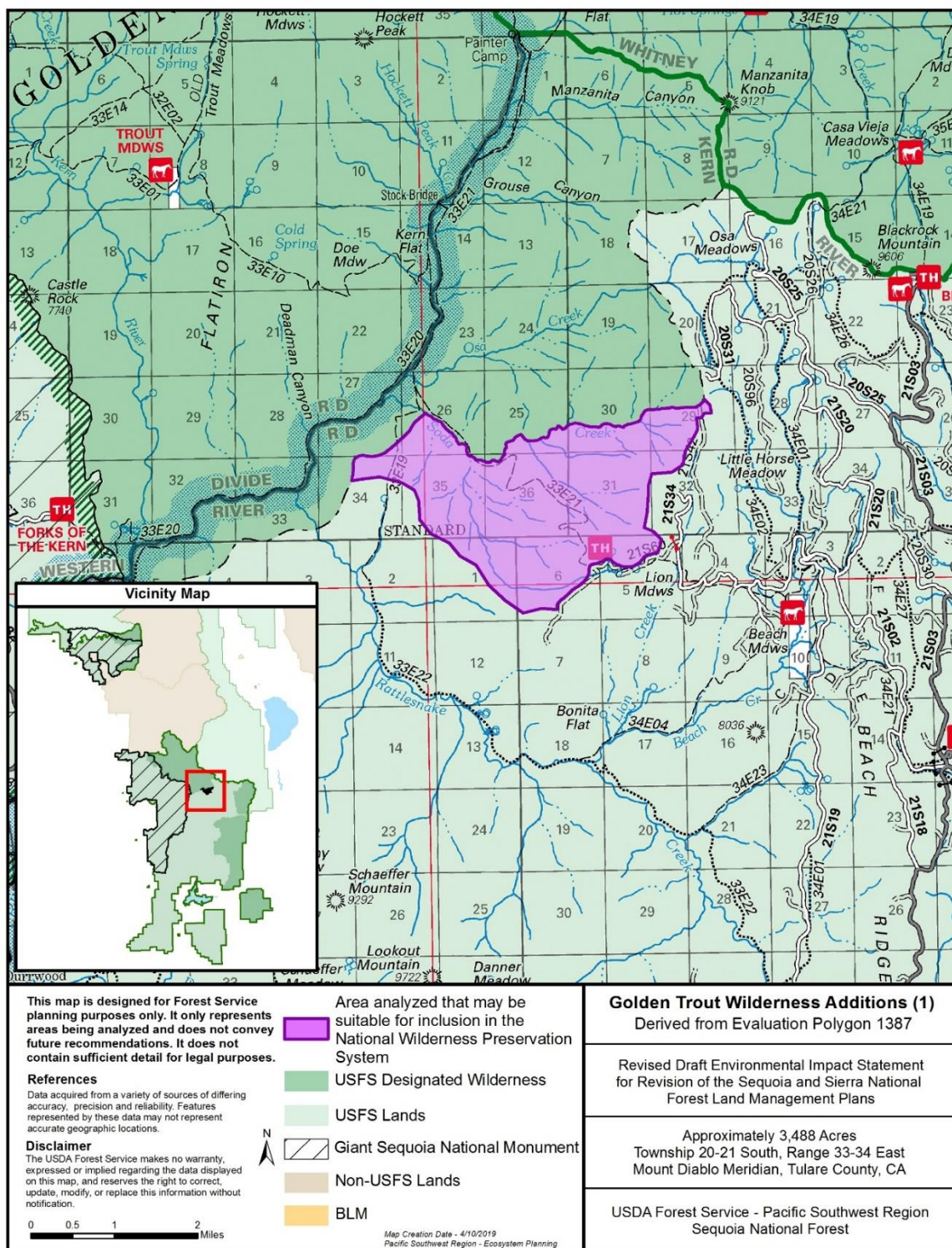
Social: Public interest. Contiguous with designated wilderness.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Vegetation shaped by natural fire regime overall appears natural.
Solitude or Primitive and Unconfined Recreation	Lion meadow hiking and horse riding trail leads to the Golden Trout Wilderness.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Provides clean water to downstream native fish and amphibians.
Manageability	Approximately 2 percent of the area is inventoried roadless area. Less than 1 percent of Rincon Inventoried Roadless is within the area. All adjacent lands are managed by the Forest Service. Recreation activities occur on roads and trails adjacent to the area including dispersed camping, hiking, backpacking, hunting, mountain biking, horse riding, and motorcycle trail-riding.

Current Uses

Approximately 2 percent of the area is inventoried roadless area. Less than 1 percent of Rincon Inventoried Roadless Area is within the area. Hiking and horse riding on the Lion Meadow Trail.



Map B-15. Golden Trout Wilderness Additions (1) area analyzed as recommended wilderness in alternative C

Golden Trout Wilderness Additions (2)

967 acres, derived from Evaluation Polygon 1390.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Osa Meadow is the last known refuge for Kern River rainbow trout and these will be reintroduced to the drainage in the near future.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the south boundary of the Golden Trout Wilderness and includes the headwaters for Osa Creek (a tributary of the Kern River), Osa Meadow, and some surrounding lands (Map B-16). The north and west boundaries follow the Golden Trout Wilderness boundary. The remainder of the boundary generally follows National Forest System roads (including 20S25 and 20S31) and a motorized trail (34E02).

General Geography, Topography, and Vegetation

Mountainous area on the Kern Plateau with elevations between approximately 7,900 feet and 9,300 feet. Vegetation is composed primarily of red fir and lodgepole pine on west-facing slopes.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Osa Meadow is the last known refuge for Kern River rainbow trout and these will be reintroduced to the drainage in the near future.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

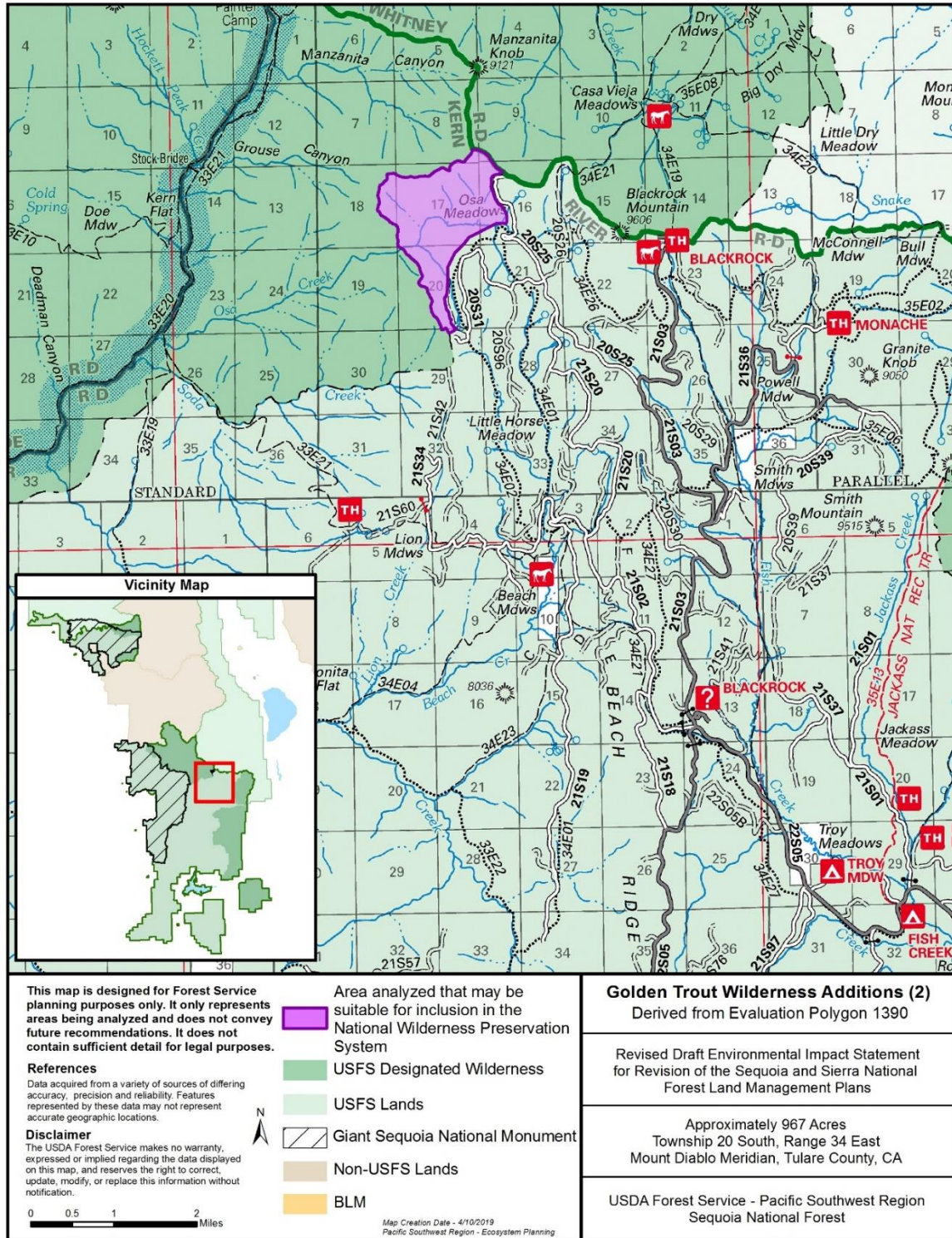
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Vegetation shaped by natural fire regime overall appears natural. Grazing occurs with corrals, fences, and water troughs. Grazing infrastructure and access roads from previous logging are not obtrusive.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist in the portions adjacent to designated wilderness, but are limited in areas where motorized use and authorized forest system roads exist just outside the boundary.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Osa Meadow is the last known refuge for Kern River rainbow trout. A number of Native American prehistoric archaeological sites are known to exist within the area.

Characteristic	Description
Manageability	All adjacent lands are managed by the Forest Service. Recreation activities occur on roads and trails adjacent to the area including dispersed camping, hiking, backpacking, hunting, mountain biking, horse riding, and motorcycle trail-riding.

Current Uses

Grazing occurs within the area.



Map B-16. Golden Trout Wilderness Additions (2) area analyzed as recommended wilderness in alternative C

Golden Trout Wilderness Additions (3)

492 acres, derived from Evaluation Polygon 1391.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the south boundary of the Golden Trout Wilderness, just east of Blackrock Mountain (Map B-17). A portion of the north boundary follows the Golden Trout Wilderness boundary. The remainder of the boundary generally follows National Forest System roads, a motorized trail, and the Inyo National Forest boundary.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 8,700 feet and 9,400 feet. Vegetation is composed primarily of montane and upper montane vegetation. Red Fir and yellow pine present in this area. Riparian and meadow areas have willows, sedges and other seasonal vegetation.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: This is an area that is the headwaters for habitat for California golden trout. As the return of this species occurs, this area will benefit the lower elevation fish bearing streams. The area is remote and clean water from snow runoff will benefit aquatic species.

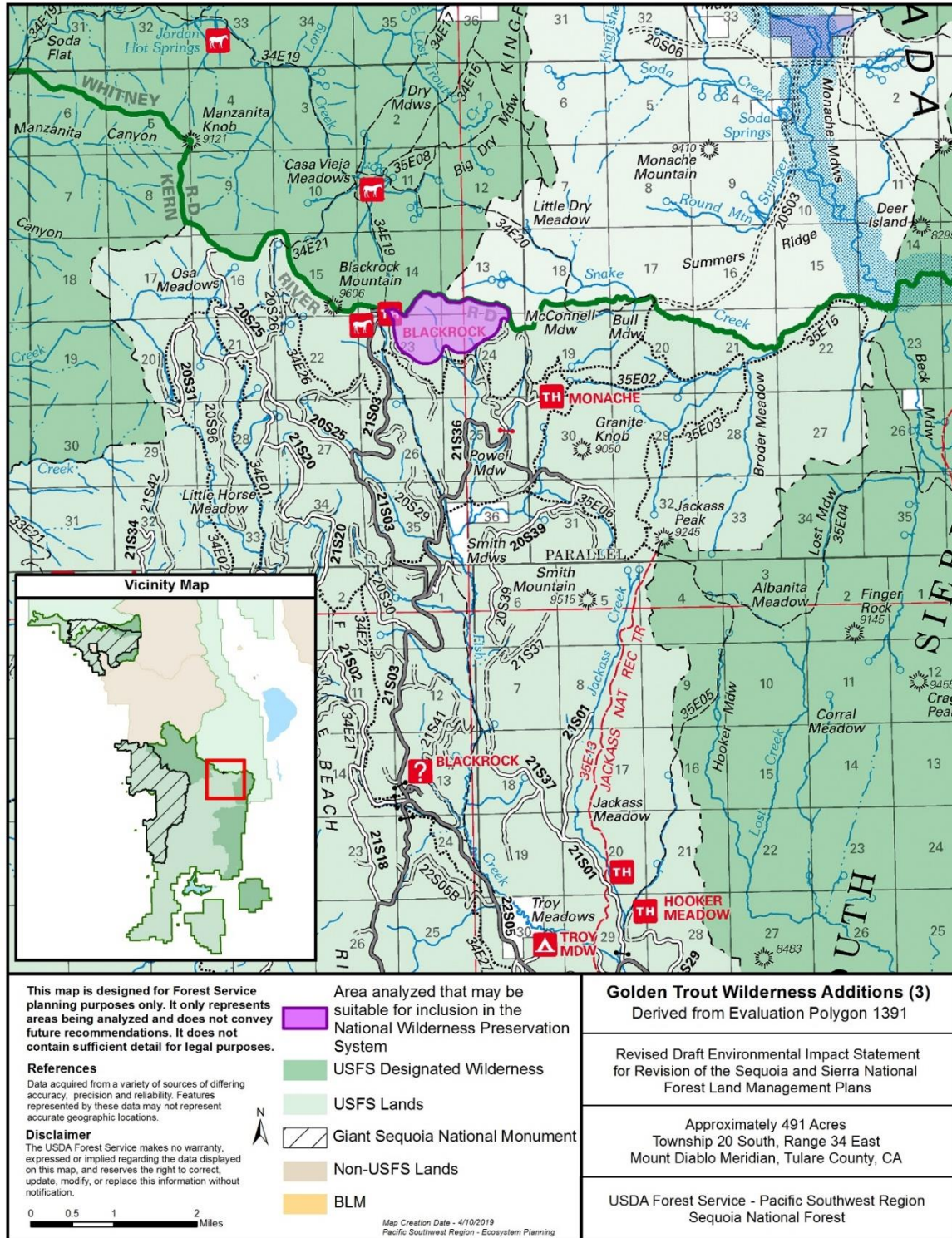
Social: Public interest. Contiguous with designated wilderness. Opportunities for primitive and unconfined recreation.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Reflects conditions that would normally be associated with an area absent human intervention.
Solitude or Primitive and Unconfined Recreation	Opportunities for primitive and unconfined recreation exist. Motorized use and authorized forest system roads exist just outside the boundary and limit opportunities for solitude.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Cultural resources.
Manageability	All adjacent lands are managed by the Forest Service. Blackrock Trailhead and horse corrals are just outside the boundary.

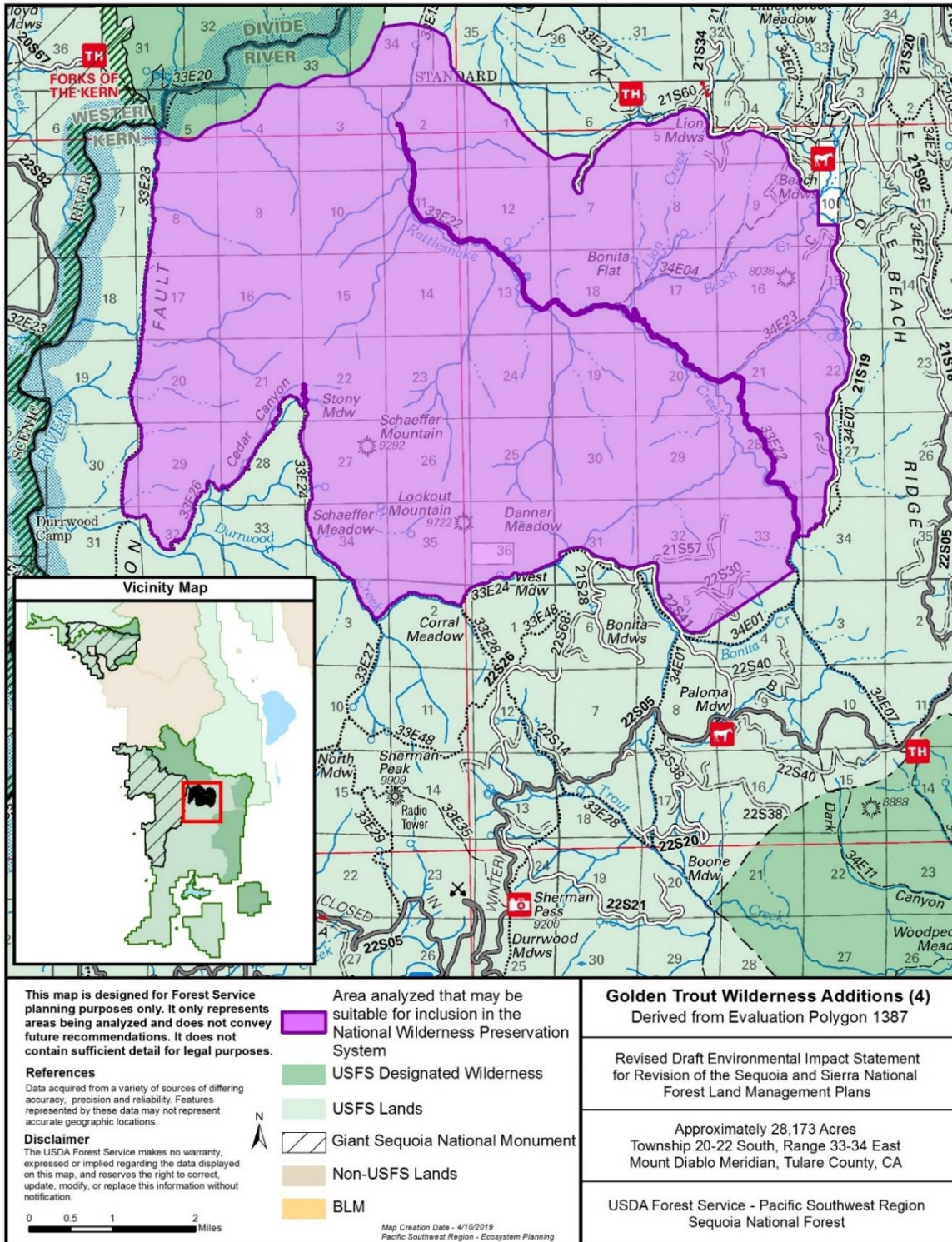
Current Uses

Grazing occurs within the area. Small amount of dispersed camping.

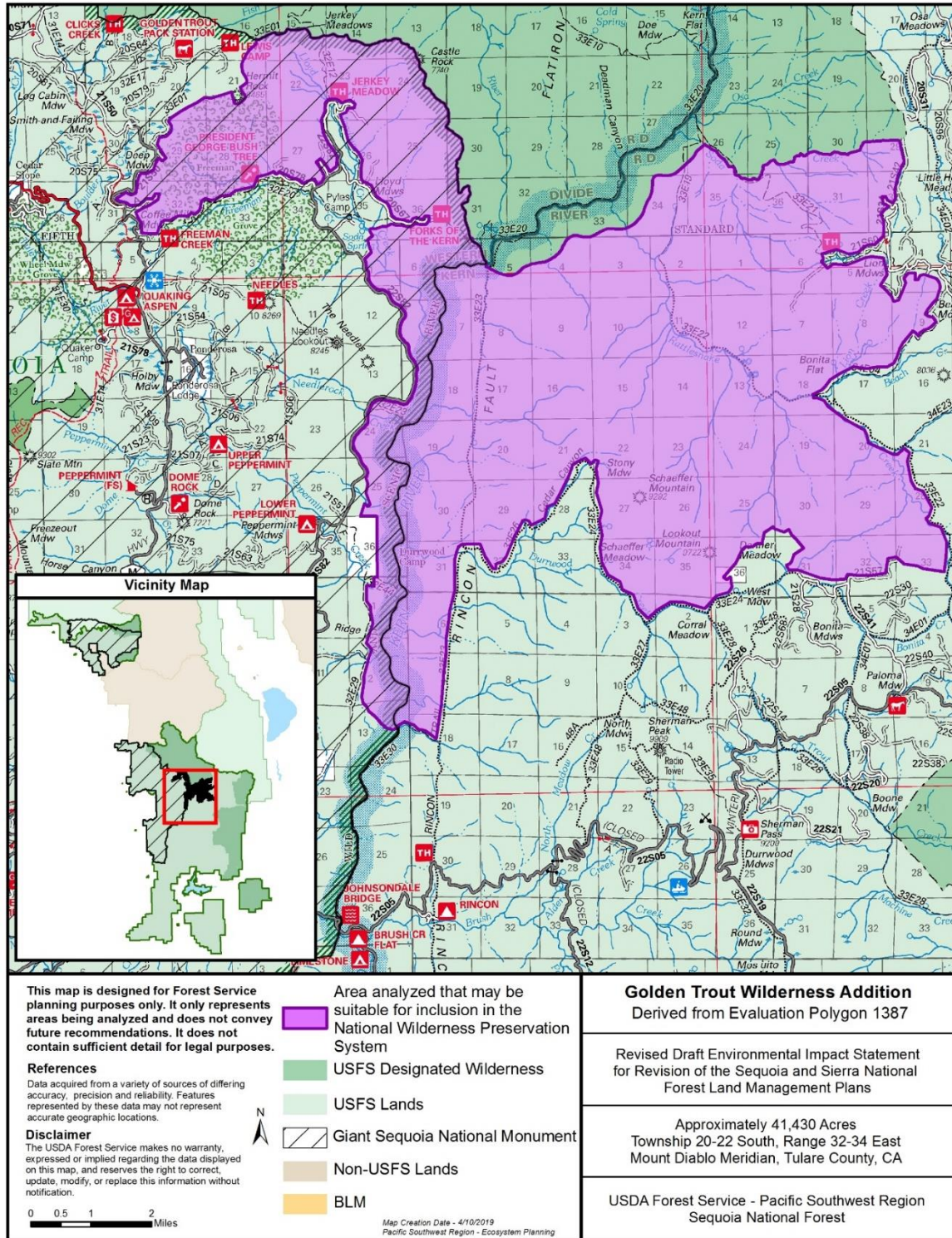


Map B-17. Golden Trout Wilderness Additions (3) area analyzed as recommended wilderness in alternative C

Golden Trout Wilderness Additions (4)



Map B-18. Golden Trout Wilderness Additions (4) area analyzed as recommended wilderness in alternative C



Map B-19. Golden Trout Wilderness Addition area analyzed as recommended wilderness in alternative E

Golden Trout Wilderness Addition – Southwest

27,973 acres, derived from Evaluation Polygon 1387.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for solitude and primitive and unconfined recreation.
- Intact condition of the ecosystem types.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the south boundary of the Golden Trout Wilderness, east of Tulare County Road 107 (Western Divide Highway), and north of Johnsondale (Map B-20 and Map B-19). The north boundary generally follows the Golden Trout Wilderness boundary. The east boundary generally follows the Rincon motorized trail (33E23). The remainder of the boundary generally follows Tulare County Road 99, Sherman Pass Road (22S05), the Western Divide Highway, National Forest System roads (including 22S82), non-motorized trails, section boundaries, and private land (including the community of Johnsondale). The boundary is set back from Forks of the Kern, Jerkey Meadow, Lewis Camp, Freeman Creek, and Needles trailheads, as well as Dome Rock as well as Upper and Lower Peppermint campgrounds.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 3,800 feet and 8,500 feet and includes the precipitous canyon of North Fork of the Kern River. Vegetation is composed primarily of chaparral at lower elevations, oak-conifer at middle elevations, and mixed conifers and Giant Sequoia groves at middle to higher elevations.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Giant Sequoia groves. Important for Fisher habitat connectivity. Prime habitat for several species of salamanders and the mountain yellow-legged frog.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

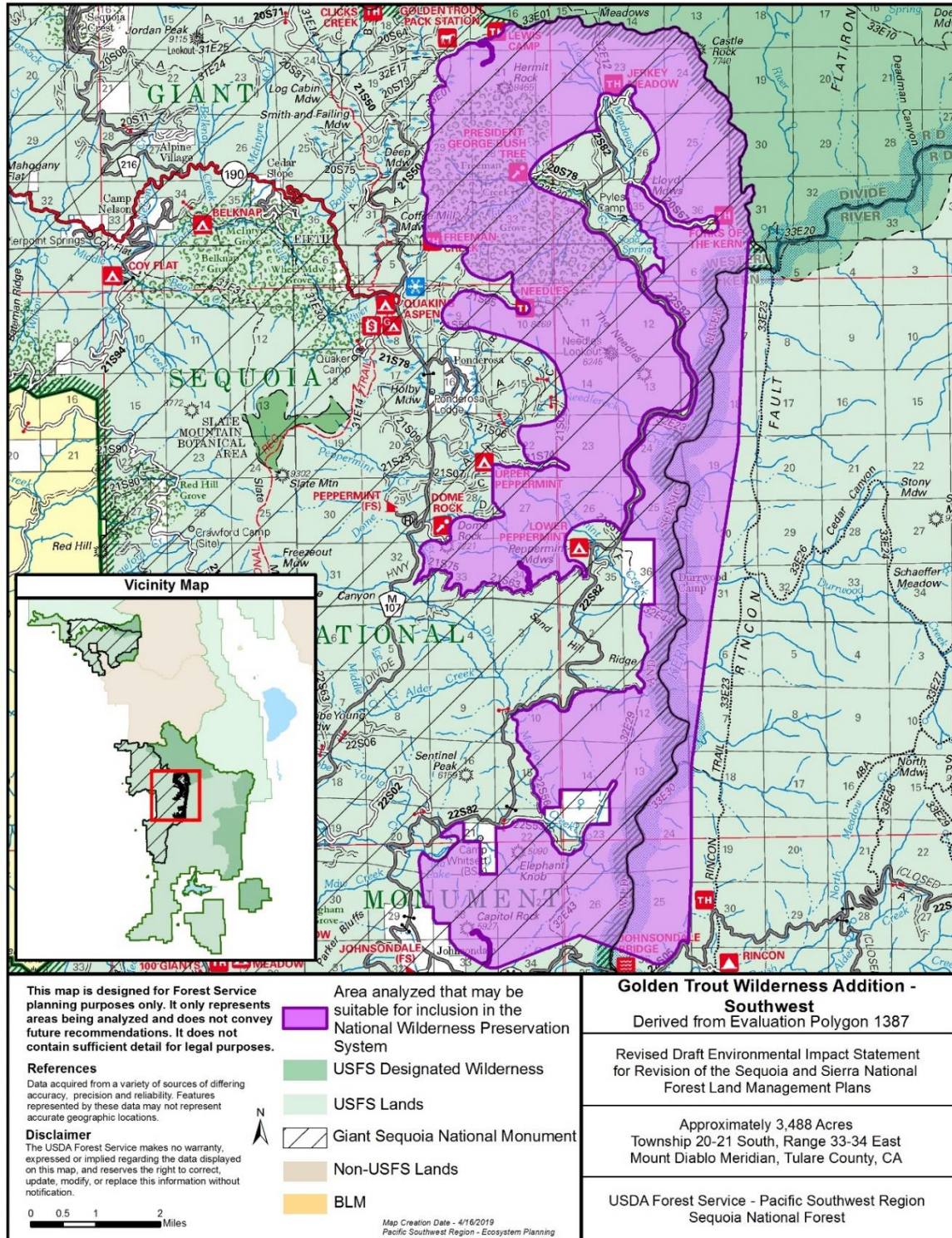
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Access roads from previous logging operations are noticeable. A road is authorized under a special use permit. SCE power transmission line exists within the area. The river corridor with steep-sided canyon walls appears primarily affected by the forces of nature. Species composition is generally the result of natural processes. Overall character of the area appears natural despite the impacts from developments.

Characteristic	Description
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude exist on steep slopes, where there is minimal recreational use. The river corridor and canyon is well insulated from the west side activities, has no developed facilities and extremely limited access even for foot travel. Opportunities for solitude are limited in areas near the boundary where motorized use, cherry-stemmed roads, private inholdings, organizational camp activities, and developed recreation use is very high in the summer just outside the boundary. Sights and sounds from fire suppression related helicopter overflights and use of the Forest Service Peppermint heliport outside the west boundary may seasonally impact opportunities for solitude. Rock climbing is popular at Dome Rock and the Needles. Mountain biking, dispersed camping, hiking, whitewater kayaking, horse riding, hunting, and fishing are also popular.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Waterfalls, granite domes and pinnacles, and columnar basalt flows on the Kern River. Giant Sequoia groves. Important for Fisher habitat connectivity. Prime habitat for several species of salamanders and the mountain yellow-legged frog.
Manageability	Approximately 39 percent of the area is inventoried roadless area. Approximately 20 percent of Rincon Inventoried Roadless Area is within the area. Mostly within Giant Sequoia National Monument and includes Freeman Creek Giant Sequoia Grove, home of the President George Bush tree. Adjacent lands are private or managed by the Forest Service. A road is authorized under a special use permit. SCE power transmission line exists within the area. Private inholdings exist. Access to Derrington cabin is under permit with California State Fish and Wildlife.

Current Uses

Approximately 39 percent of the area is inventoried roadless area. Approximately 20 percent of Rincon Inventoried Roadless Area is within the area. Mostly within Giant Sequoia National Monument and includes Freeman Creek Giant Sequoia Grove, home of the President George Bush tree. Grazing occurs within the area. Rock climbing is popular at Dome Rock and the Needles. Mountain biking, dispersed camping, hiking, whitewater kayaking, horse riding, hunting, and fishing are also popular. Organizational camp use is high.



Map B-20. Golden Trout Wilderness Addition – Southwest area analyzed as recommended wilderness in alternative C

South Sierra Wilderness Additions – West (1)

2,155 acres, derived from Evaluation Polygon 1391.

Summary of Factors Considered in Carrying this Area Forward for Analysis

The Sequoia National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the southeast boundary of the South Sierra Wilderness, just northeast of Jackass Peak (Map B-21). The east boundary follows the South Sierra Wilderness boundary. The remainder of the boundary generally follows motorized trails, including 35E03 and 35E15.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 7,900 feet and 9,200 feet, including Broder Meadow, which spreads out under a ridgeline. Vegetation is composed primarily of conifer/mixed conifer with wet meadows.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Headwater area to the South Fork Kern River Provides clean water to downstream native trout and amphibians.

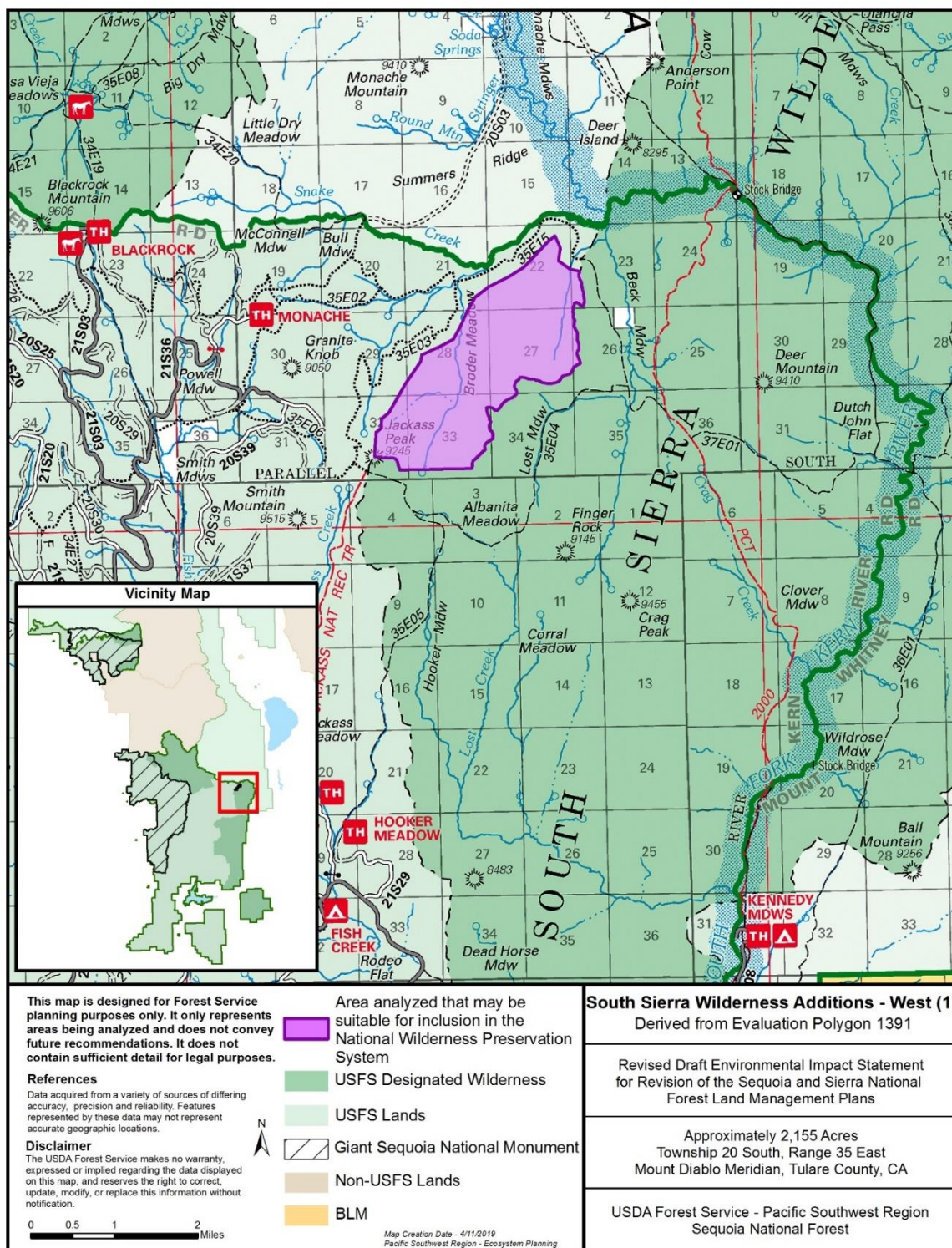
Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Reflects conditions that would normally be associated with an area absent human intervention.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking. Motorized use and authorized forest system roads exist just outside the boundary and limit opportunities for solitude. Mountain biking and hiking are popular.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Jackass Peak is a distinctive granitic landmark (9,245 feet). Cultural resources consisting of multiple tribal village sites that form a connected network.
Manageability	Approximately 99 percent of the area is inventoried roadless area. Approximately 27 percent of South Sierra Inventoried Roadless Area is within the area. All adjacent lands are managed by the Forest Service.

Current Uses

Approximately 99 percent of the area is inventoried roadless area. Approximately 27 percent of South Sierra Inventoried Roadless Area is within the area. Grazing occurs within the area. Mountain biking and hiking are popular in this area as is snowmobiling in the winter.



Map B-21. South Sierra Wilderness Additions – West (1) area analyzed as recommended wilderness in alternative C

South Sierra Wilderness Additions – West (2)

2,880 acres, derived from Evaluation Polygon 1391.

Summary of Factors Considered in Carrying this Area Forward for Analysis

The Sequoia National Forest considered the following factors in selecting this area as part of alternative C:

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along the southern most portion of the South Sierra Wilderness (Map B-22). The north boundary follows the South Sierra Wilderness boundary. The remainder of the boundary generally follows the South Fork of the Kern River, the Inyo National Forest boundary, private land, motorized trails, and National Forest System roads, including Sherman Pass Road (22S05) and Kennedy Meadows Road, and motorized trails. The boundary is set back from Kennedy Meadows campground and trailhead as well as Hooker Meadow trailhead.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 6,000 feet and 9,200 feet. Vegetation is composed primarily of conifer/mixed conifer with wet meadows.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Headwater area to Bitter Creek, a heritage trout water for the State of California. Golden trout occur in this section of the South Fork Kern River Provides clean water to downstream native trout and amphibians.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

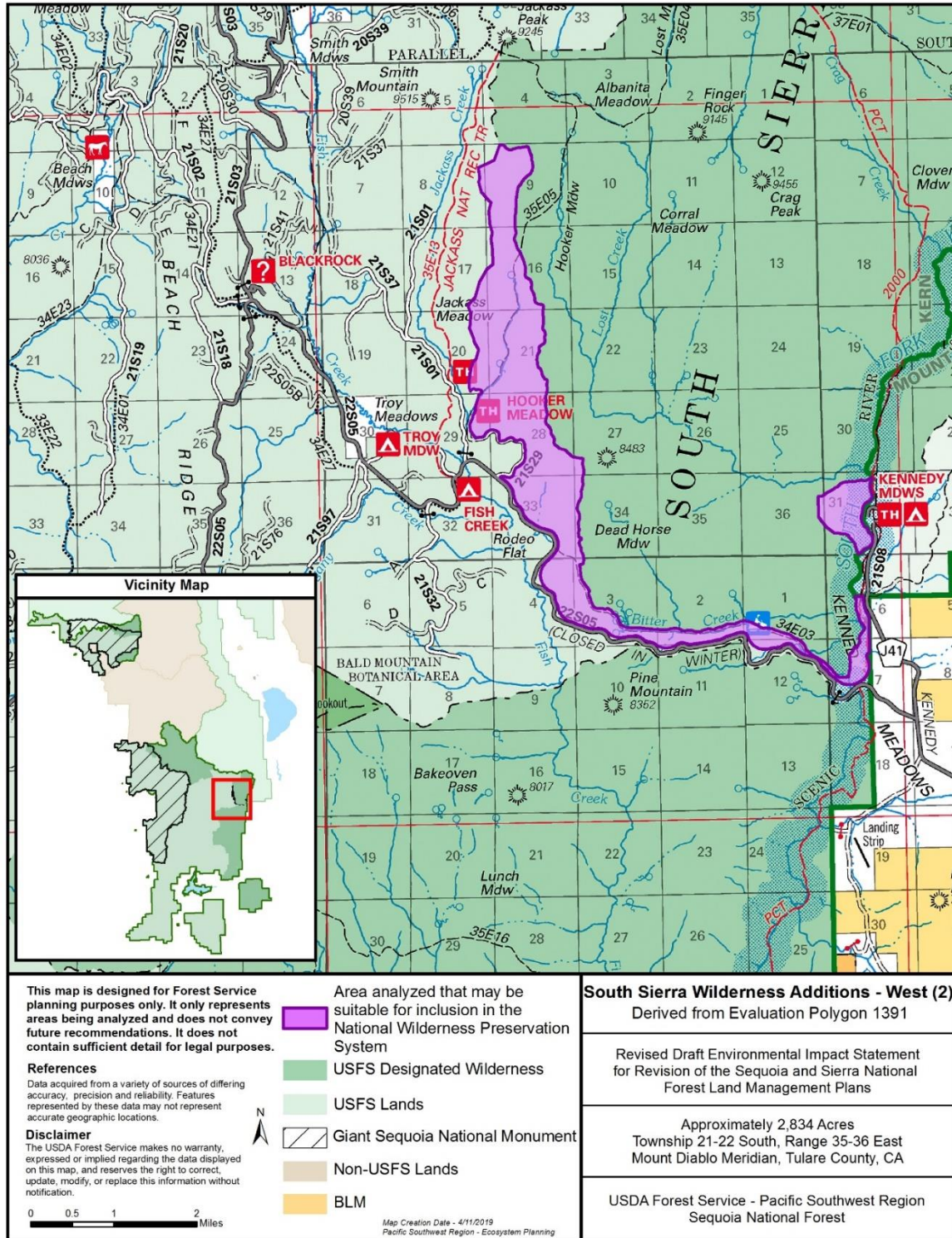
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Reflects conditions that would normally be associated with an area absent human intervention.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking, backpacking, horse riding, hunting, and fishing. Mountain biking also occurs. Motorized use and authorized forest system roads exist just outside the boundary and limit opportunities for solitude.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Jackass Peak is a distinctive granitic landmark (9,245 feet) and can be seen from some areas.

Characteristic	Description
Manageability	Approximately 69 percent of the area is inventoried roadless area. Approximately 25 percent of South Sierra Inventoried Roadless Area is within the area. Adjacent lands are private or managed by the Forest Service.

Current Uses

Approximately 69 percent of the area is inventoried roadless area. Approximately 25 percent of South Sierra Inventoried Roadless Area is within the area. Grazing occurs within the area. Hiking, backpacking, mountain biking, and horse riding on several national forest system trails that access the South Sierra Wilderness, deer hunting in the fall and fishing on the South Fork Kern River.



Map B-22. South Sierra Wilderness Additions – West (2) area analyzed as recommended wilderness in alternative C

Domeland Wilderness Addition – West

18,817 acres, derived from Evaluation Polygon 1394.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the northwest boundary of the Domeland Wilderness, north of the Tulare/Kern County line, and south of Boone Meadow (Map B-23 and Map B-24). The east boundary generally follows the Domeland Wilderness boundary. The remainder of the boundary generally follows National Forest System roads, authorized motorized and non-motorized trails, and section boundaries. The boundary is set back from Manter Meadow North and South trailheads.

General Geography, Topography, and Vegetation

Mountainous area on the Kern Plateau with elevations between approximately 6,500 feet and 10,000 feet. Vegetation is composed primarily of various shrubs, forbs, non-native grasses, and chaparral at the mid-elevations and conifer forests with abundant meadows and mountain streams at higher elevations.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Twisselmann Botanical Area.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

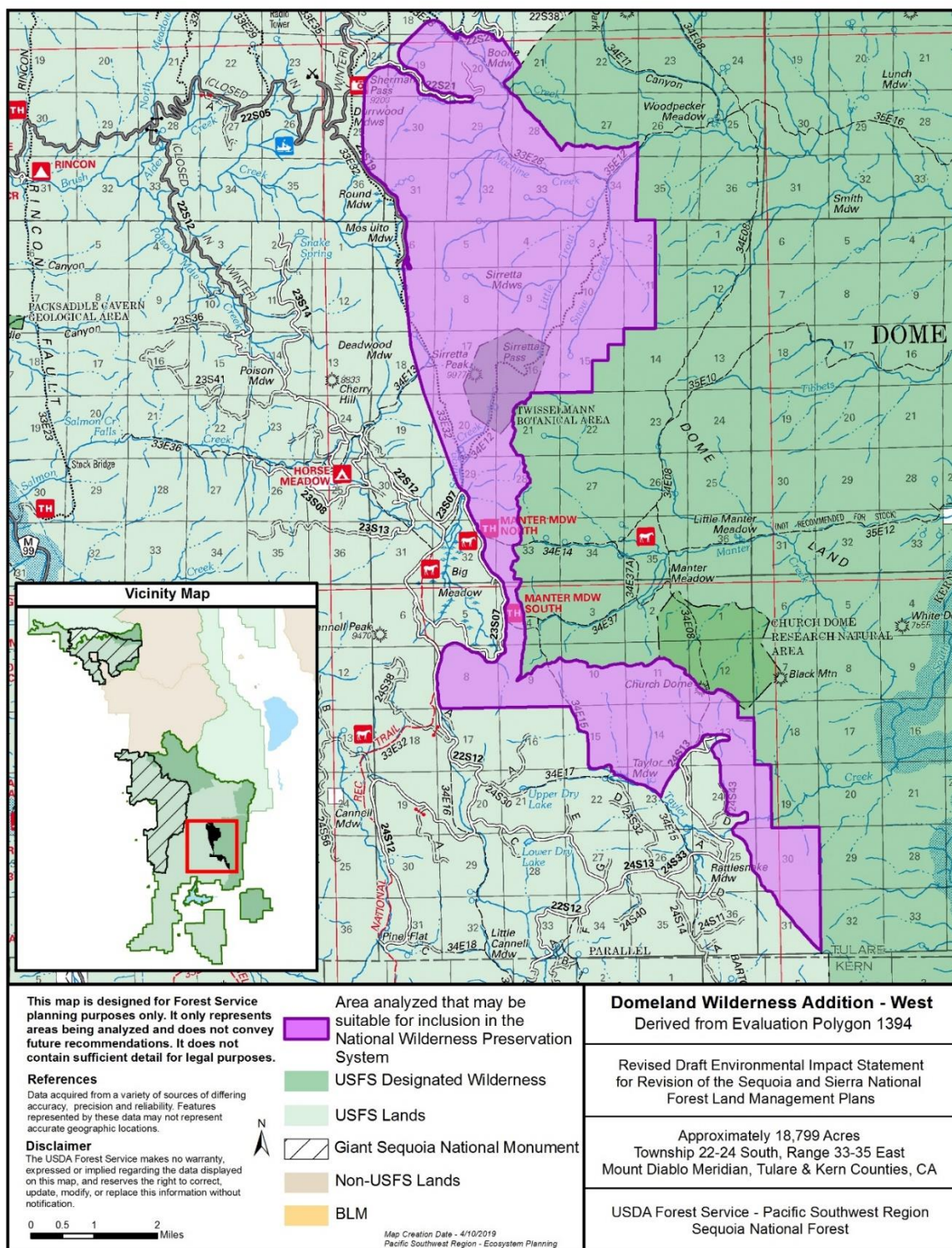
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Generally appears natural and ecological integrity is largely intact. Grazing occurs, with water troughs, fence line and corrals.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking, hunting, and fishing, especially in areas with steep topography, high elevation, and/or near designated wilderness. Motorized use and authorized forest system roads exist just outside the boundary as well as within the boundary, and limit opportunities for solitude in those areas. Dispersed camping and mountain biking also occur.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Twisselmann Botanical Area. Historic and prehistoric sites.

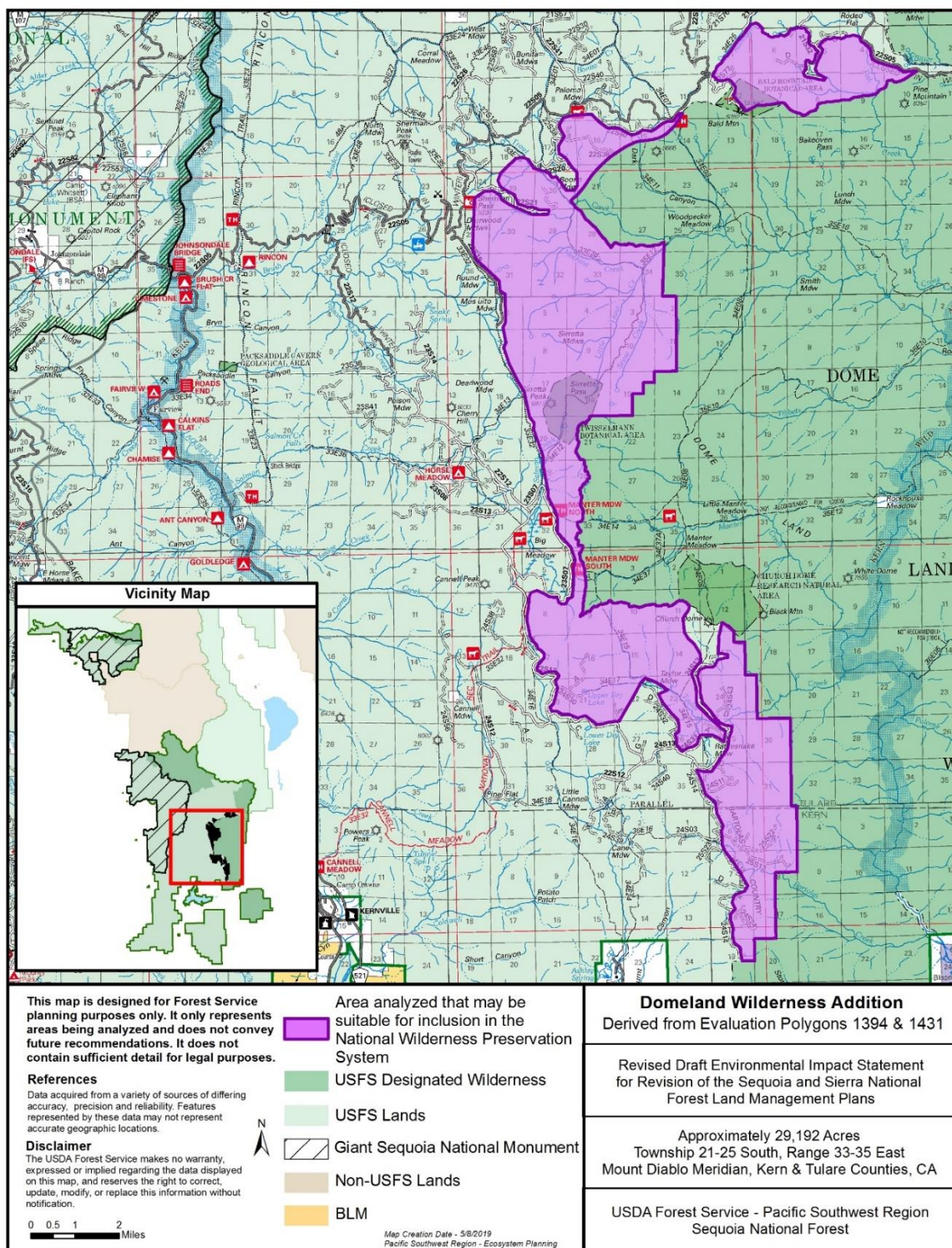
Characteristic	Description
Manageability	Approximately 66 percent of the area is inventoried roadless area. Approximately 71 percent of Domeland Addition Inventoried Roadless Area and 85 percent of Woodpecker Inventoried Roadless Area are within the area. Partly within the Trout Creek South Fork Kern critical aquatic refuge. Twisselmann Botanical Area is entirely within the area. All adjacent lands are managed by the Forest Service.

Current Uses

Approximately 66 percent of the area is inventoried roadless area. Approximately 71 percent of Domeland Addition Inventoried Roadless Area and 85 percent of Woodpecker Inventoried Roadless Area are within the area. The northern most area is in the Trout Creek South Fork Kern critical aquatic refuge and includes Twisselmann Botanical Area. Lightly used for dispersed camping, hiking, mountain biking, hunting, and fishing. Grazing occurs within the area. There are three motorized routes within the area: a portion of road 22S21 and motorized trails the Sirretta Trail (34E12) and the Cannell Meadow Trail (33E32). The Sirretta Trail is identified in the Mediated Settlement of 1990 for removal or replacement. Edwards Air Force Base has a special use permit for pilot wilderness survival training approximately 5 times per year within the area.



Map B-23. Domeland Wilderness Addition (West) areas analyzed as recommended wilderness in alternative C



Map B-24. Domeland Wilderness Addition areas analyzed as recommended wilderness in alternative E

Domeland Wilderness Addition – South

14,666 acres, derived from Evaluation Polygon 1394.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the southwest boundary of the Domeland Wilderness, east of Kernville, south of the Cannell Meadow National Recreation Trail, and south of the Tulare/Kern County line (Map B-25). A portion of the southeast boundary follows the Domeland Wilderness boundary. The remainder of the south boundary and the southern portion of the west boundary generally follow Bureau of Land Management land and private land. The remainder of the east and west boundaries, as well as the north boundary, generally follow National Forest System roads, authorized motorized and non-motorized trails, section boundaries, and the Tulare/Kern County line.

General Geography, Topography, and Vegetation

Ridge-topped hills and canyons with steep slopes and elevations between approximately 2,800 feet and 8,300 feet. Vegetation is composed primarily of various shrubs, forbs, non-native grasses, and chaparral at mid-elevations and conifer forests with meadows and streams at higher elevations.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

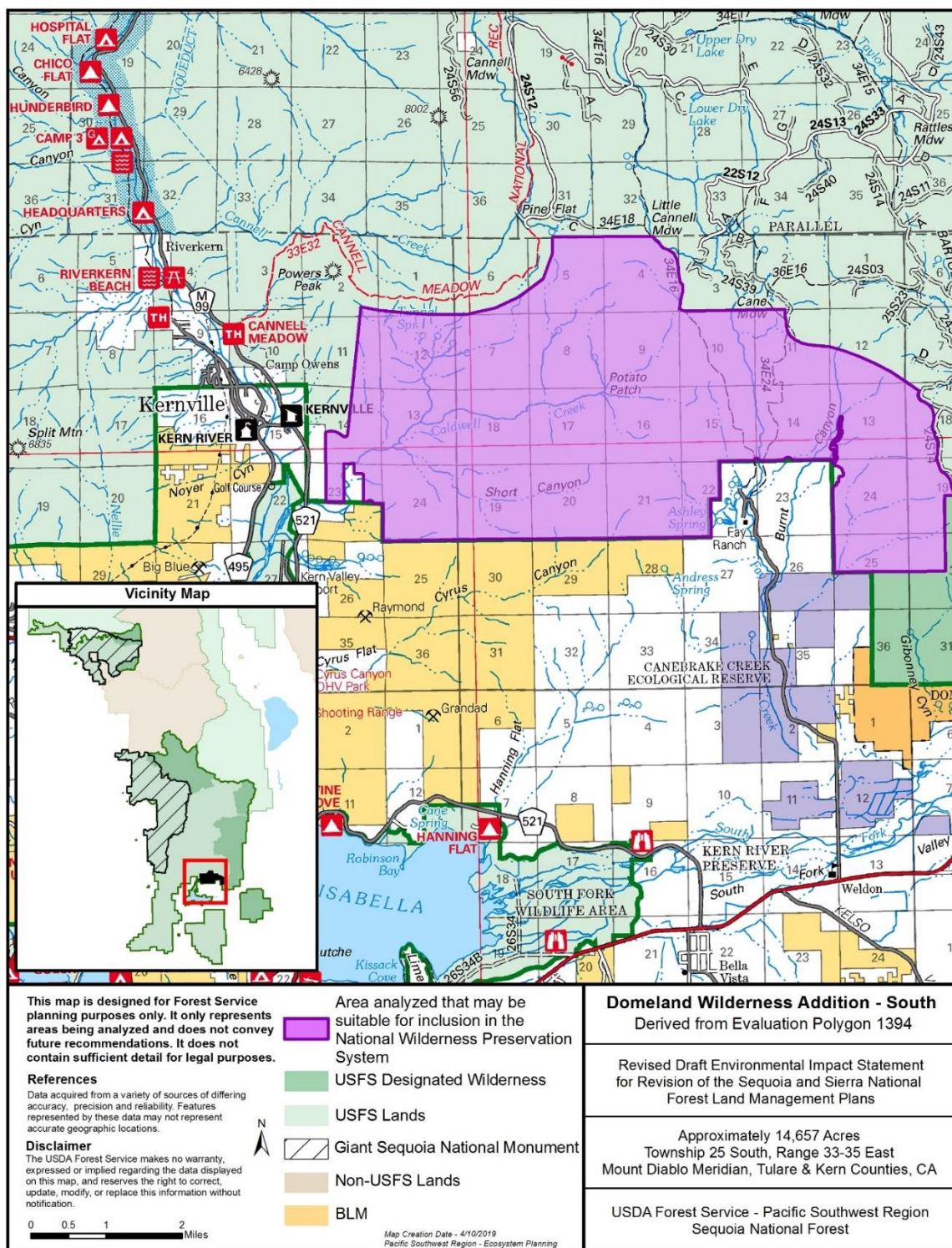
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Generally appears natural and ecological integrity is largely intact. Grazing occurs, with water troughs, fence line and corrals.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking, hunting, and fishing, especially in areas with steep topography, high elevation, and/or near designated wilderness. Motorcycle riding is popular in the surrounding areas, including just outside the boundary, and limits opportunities for solitude in those areas. Dispersed camping and mountain biking also occur.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Historic and prehistoric sites.

Characteristic	Description
Manageability	Approximately 95 percent of the area is inventoried roadless area. Approximately 31 percent of Cannell Inventoried Roadless Area is within the area. Adjacent lands are private, state, or managed by the Forest Service or Bureau of Land Management.

Current Uses

Approximately 95 percent of the area is inventoried roadless area. Approximately 31 percent of Cannell Inventoried Roadless Area is within the area. The area is lightly used for dispersed camping, hiking, mountain biking, hunting and fishing. Grazing occurs within the area.



Map B-25. Domeland Wilderness Addition (South) areas analyzed as recommended wilderness in alternative C

Hatchet Peak

6,060 acres, derived from Evaluation Polygon 1404.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for solitude and primitive and unconfined recreation.

Location and Description of Recommended Boundary

Along the west boundary of the Sequoia National Forest, south of the Tule River Indian Reservation, north of Tulare County Road 50, and includes Hatchet Peak (Map B-26). The north boundary follows the Tule River Indian Reservation boundary. The west boundary follows Bureau of Land Management land and private land. The remainder of the boundary generally follows National Forest System roads and Tulare County Road 50.

General Geography, Topography, and Vegetation

Primarily a moderate to steep west-facing slope with elevations between approximately 3,400 feet and 7,600 feet. Vegetation is composed primarily of mixed oak woodland.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: This area is a headwater to Cold Springs and Rube Creeks. These areas may contain refugia for foothill yellow legged frogs and slender salamanders. Rare plants also are present in the area.

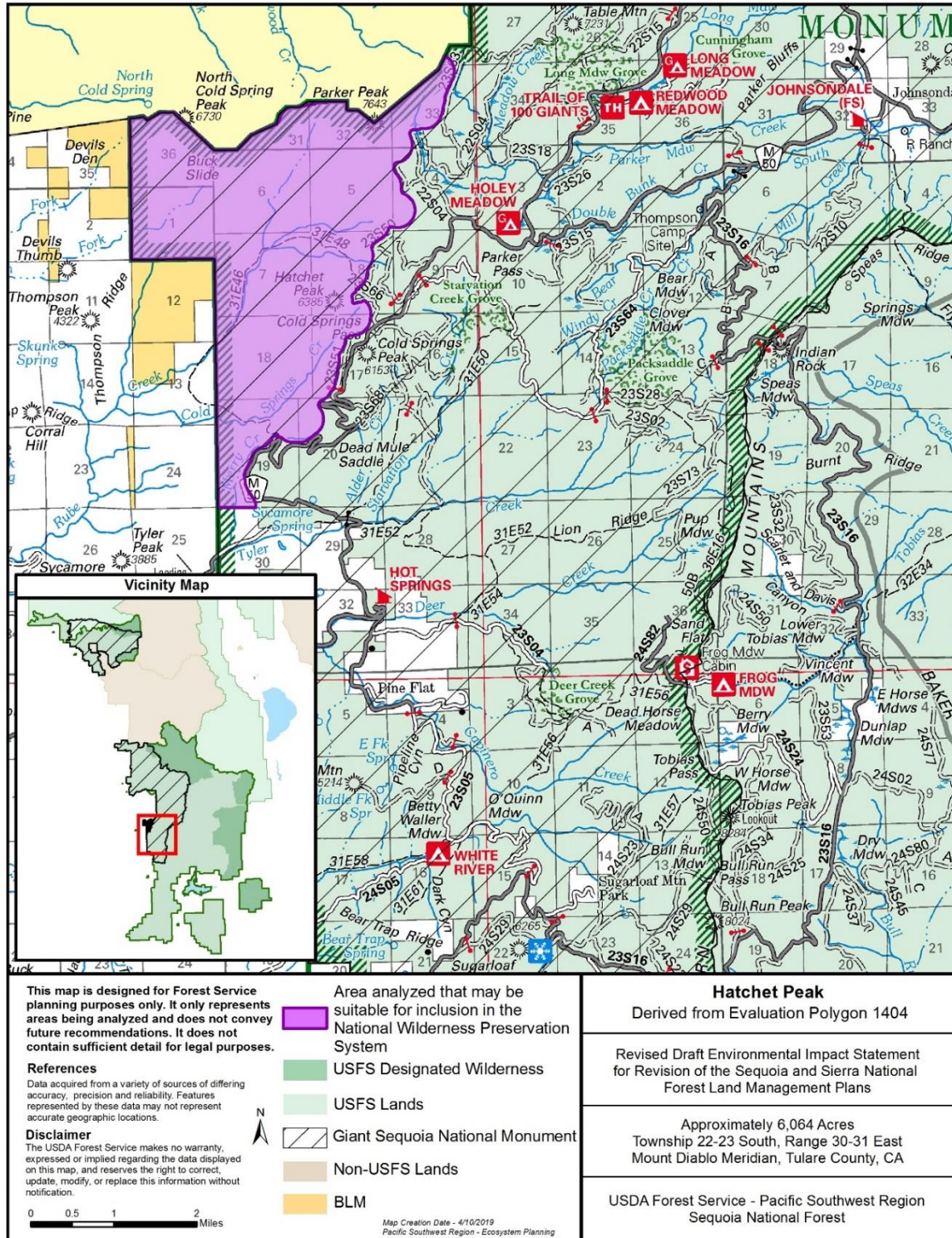
Social: Public interest. Opportunities for solitude and primitive and unconfined recreation.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Fire suppression has affected vegetation. Illegal marijuana cultivation has occurred. Evidence of logging and fuels management (roads and planting) exists in a few areas near the road.
Solitude or Primitive and Unconfined Recreation	Development on adjacent lands is visible and may limit opportunities for solitude. The area is steep and rugged with views across at the valley. Opportunities for primitive and unconfined recreation exist, including hiking and horse riding on a non-motorized, loop trail. Mountain biking is currently authorized.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Historic and prehistoric sites.
Manageability	Entirely within Giant Sequoia National Monument. Adjacent lands are private or managed by the Tule River Indian Reservation, Forest Service, or Bureau of Land Management. Timber harvest and grazing occur on adjacent Tule River Indian Reservation, Bureau of Land Management, and private land. This is part of a very active Tule River Tribe fuels emphasis area. The north end of the polygon has been logged and planted. SCE power transmission line exists along edges.

Current Uses

Entirely within Giant Sequoia National Monument. Grazing occurs within the area. Recreation use is generally low and currently limited to areas near roads along the boundary.



Map B-26. Hatchet Peak area analyzed as recommended wilderness in alternative C

Stormy Canyon

40,457 acres, derived from Evaluation Polygon 1408.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.

Location and Description of Recommended Boundary

East of the Greenhorn Mountains, west of Tulare County Road 99 and the Kern River, north of Kernville, Wofford Heights, and California State Highway 155, south of Johnsondale, and includes a portion of the North Fork Kern Wild and Scenic River (Map B-27 and Map B-28). The north boundary generally follows County Road 99, private land (including the community of Johnsondale), and National Forest System Road 22S10. The west boundary generally follows National Forest System roads (including 23S16, 24S77, and 24S35) as well as authorized motorized trail 32E39. The east and south boundaries generally follow the Kern River, State Highway 155, a power transmission line, Bureau of Land Management land, and private land (including the community of Kernville).

General Geography, Topography, and Vegetation

Steep east-facing slope on the Upper Kern Canyon Escarpment with elevations between approximately 2,800 feet and 7,927 feet (Baker Peak). Vegetation is composed primarily of shrubs, with limited hardwood woodland and conifer hardwood woodland.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Baker Point Botanical Area. North Fork Kern Wild and Scenic River.

Social: Public interest.

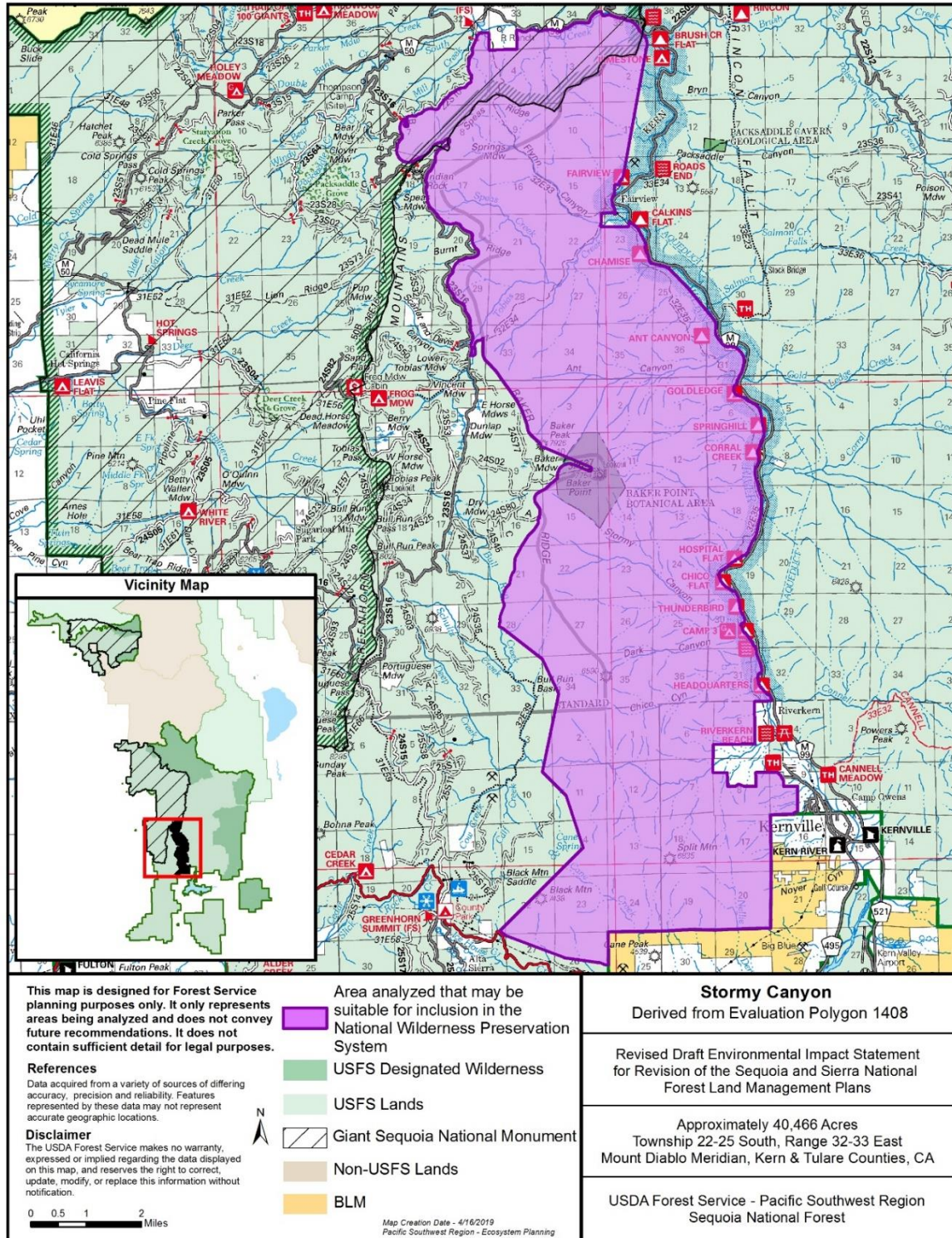
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Somewhat reflects natural conditions, with natural processes, such as fire and secondary plant succession, except for plantations on the west boundary and a few meadows on the west boundary with large gullies. Communication site and Baker Point Lookout located at Baker Point.

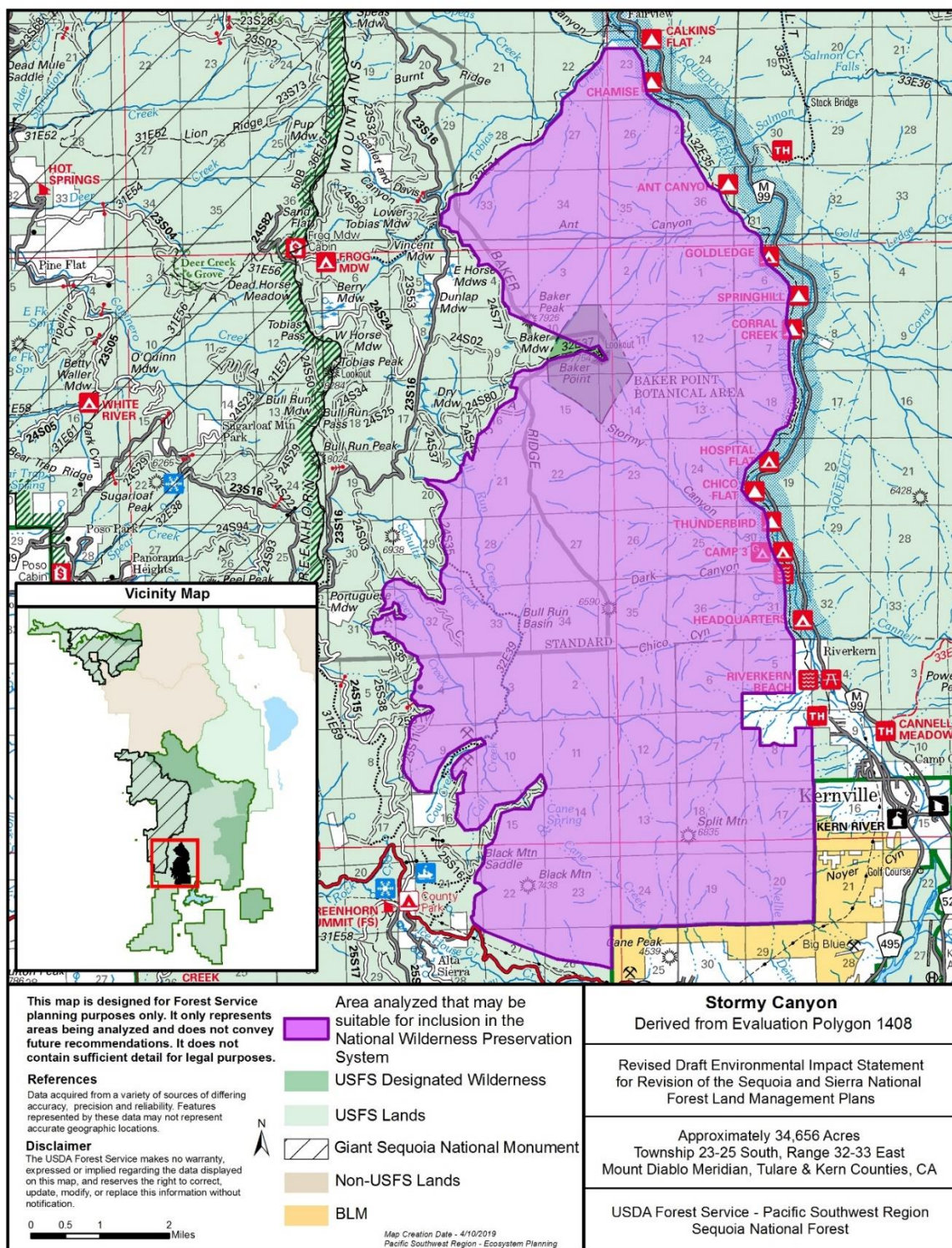
Characteristic	Description
Solitude or Primitive and Unconfined Recreation	Opportunities for primitive and unconfined recreation exist, including hiking and horse riding. Mountain biking also occurs. Whiskey Flat Trail is a popular non-motorized trail beginning at the north end of the town of Kernville and travelling north along the Upper Kern River. This area along the North Fork Kern Wild and Scenic River, including County Road 99, experiences extremely high visitor use. The Upper Kern River also receives thousands of commercial and private whitewater boating visitors each year, as a world-wide whitewater recreation and fishing destination. Motorized use and authorized forest system roads as well as developed and undeveloped recreation facilities exist just outside the boundary and limit opportunities for solitude along that boundary. On east-facing slopes, sights and sounds from adjacent development and activities are apparent. Military training overflights occur frequently in this area. Power transmissions lines are visible within the area. The steep terrain and vegetation type generally limits access to most of the area.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Baker Point Botanical Area. Numerous cultural resources. North Fork Kern Wild and Scenic River.
Manageability	Approximately 93 percent of the area is inventoried roadless area. Approximately 94 percent of Chico Inventoried Roadless Area is within the area. Small portion within Giant Sequoia National Monument. Portion of North Fork Kern Wild and Scenic River is within the area. Baker Point Botanical Area is almost entirely within the area. Communication site and Baker Point Lookout located at Baker Point. Adjacent lands are private or managed by the Forest Service or Bureau of Land Management.

Current Uses

Approximately 93 percent of the area is inventoried roadless area. Approximately 94 percent of Chico Inventoried Roadless Area is within the area. A small portion of the northern area is within Giant Sequoia National Monument. Portion of North Fork Kern Wild and Scenic River is within the area. Baker Point Botanical Area is almost entirely within the area. Hiking, mountain biking, and horse riding.



Map B-27. Stormy Canyon area analyzed as recommended wilderness in alternative C



Map B-28. Stormy Canyon area analyzed as recommended wilderness in alternative E

Domeland Wilderness Fish Creek Addition

3,932 acres, derived from Evaluation Polygon 1431.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Along a portion of the north boundary of the Domeland Wilderness, just northwest of Bald Mountain (Map B-29 and Map B-24). The south boundary follows the Domeland Wilderness boundary. The remainder of the boundary generally follows National Forest System roads (including 22S05, 21S32, 21S32A, 21S32C, 21S32D, 21S97, and 22S77 to Bald Mountain), and motorized trail 34E25. The boundary is set back from Fish Creek campground.

General Geography, Topography, and Vegetation

Mountainous area with elevations between approximately 6,900 feet and 9,400 feet. Vegetation is composed primarily of high desert/montane chaparral transition at mid-elevations, and conifer and mixed conifer at higher elevations, including eastside pine, pinyon/juniper, and Sierran mixed conifer.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Bald Mountain Botanical Area.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

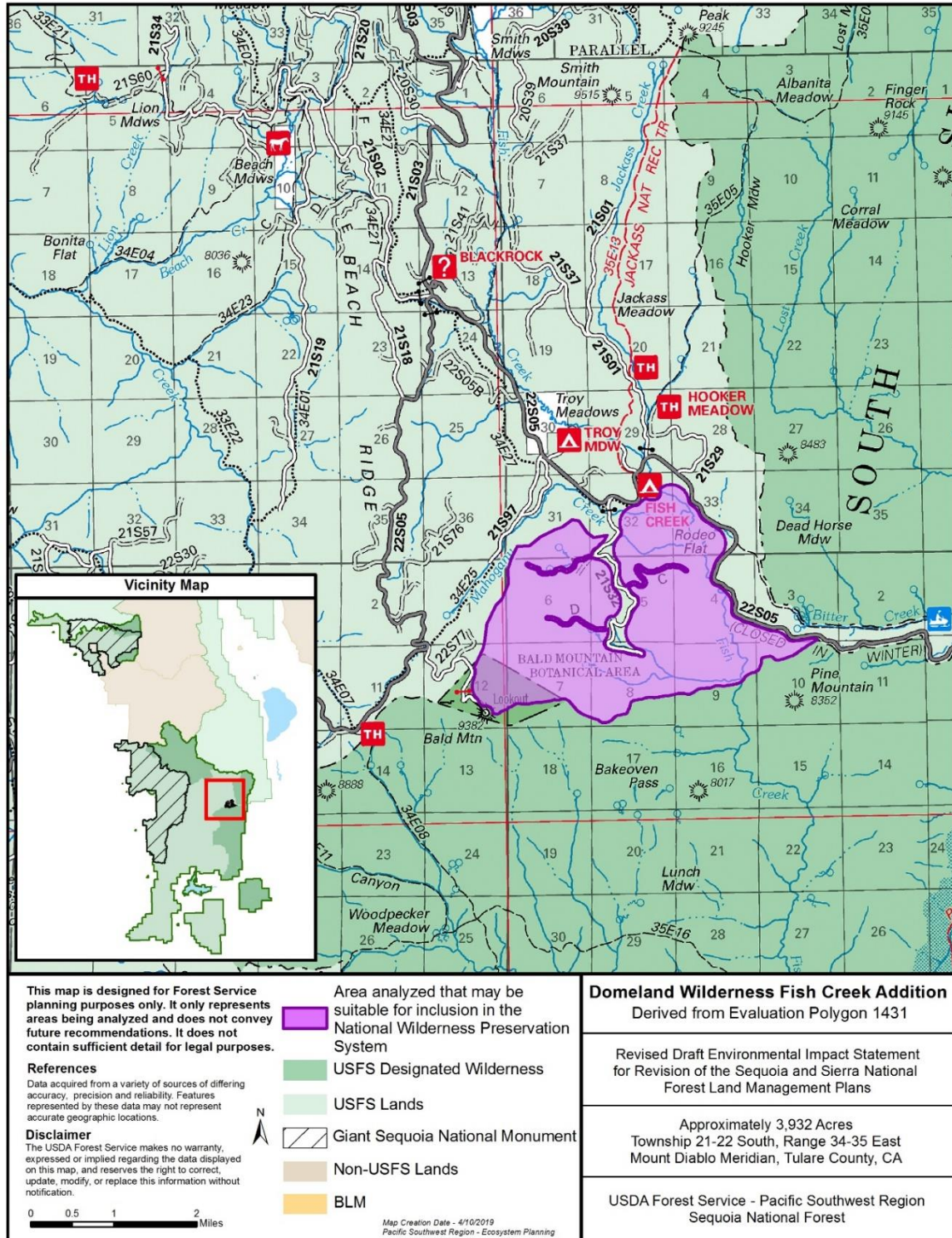
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Generally appears natural and ecological integrity is largely intact. Grazing occurs. The area has been affected by wildfire and a limited amount of timber harvest. Natural wildfires and many rock outcrops have eliminated visual evidence of past timber harvest.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude exist. The area is remote and receives little visitation. Development and signage are scarce. Opportunities for primitive and unconfined recreation include hunting and fishing. Dispersed camping also occurs.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Bald Mountain Botanical Area. Fish Creek Canyon. Geologic features (basalt caps) are unique resources.

Characteristic	Description
Manageability	Approximately 36 percent of the area is inventoried roadless area. Approximately 12 percent of Woodpecker Inventoried Roadless Area is within the area. Most of Bald Mountain Botanical Area is within the area. All adjacent lands are managed by the Forest Service.

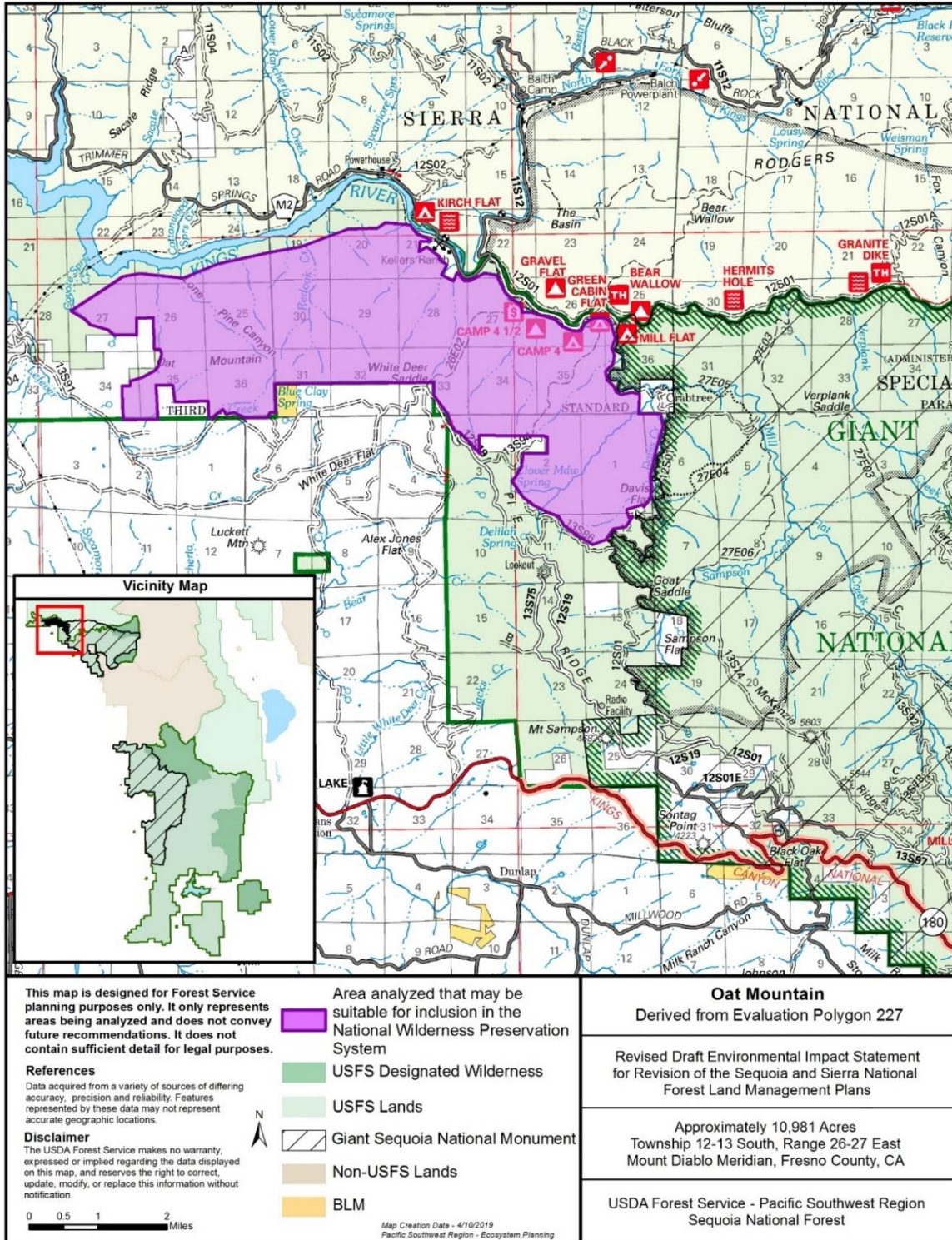
Current Uses

Approximately 36 percent of the area is inventoried roadless area. Approximately 12 percent of Woodpecker Inventoried Roadless Area is within the area. Most of Bald Mountain Botanical Area is within the area. Grazing occurs within the area. The area is lightly used for dispersed camping, hunting, and fishing. Edwards Air Force Base has a special use permit for pilot wilderness survival training approximately 5 times per year within the area.



Map B-29. Domeland Wilderness Fish Creek Addition area analyzed as recommended wilderness in alternative C

Oat Mountain



Map B-30. Oat Mountain area analyzed as recommended wilderness in alternative E

Sierra National Forest

Sycamore Springs

17,908 acres, derived from Evaluation Polygon 315.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for primitive and unconfined recreation.

Location and Description of Recommended Boundary

Southwest of Wishon Reservoir, north of the Kings River Special Management Area, and includes most of the Teakettle Experimental Area (Map B-31 and Map B-32). The south boundary generally follows National Forest System Roads (including 11S02 and 11S12), Balch Tunnel and Penstock, and Haas Tunnel and Penstock to the south boundary of the Teakettle Experimental Area. In the Teakettle Experimental Area, the boundary generally follows Haas Tunnel and National Forest System roads (including 11S15, 11S15A, 11S10, and 11S16) and also includes some land north of the Teakettle Experimental Area boundary as well. The remainder of the boundary generally follows National Forest System roads (10S24, 10S24R, 11S82, 11S82A, 11S41, and 10S69) and a power transmission line. The boundary is set back from Sawmill Flat campground.

General Geography, Topography, and Vegetation

Elevations between approximately 1,400 feet and 7,800 feet. Vegetation is composed primarily of mixed conifer forest and includes old-growth ponderosa pine forest.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Social: Public interest. Opportunities for primitive and unconfined recreation.

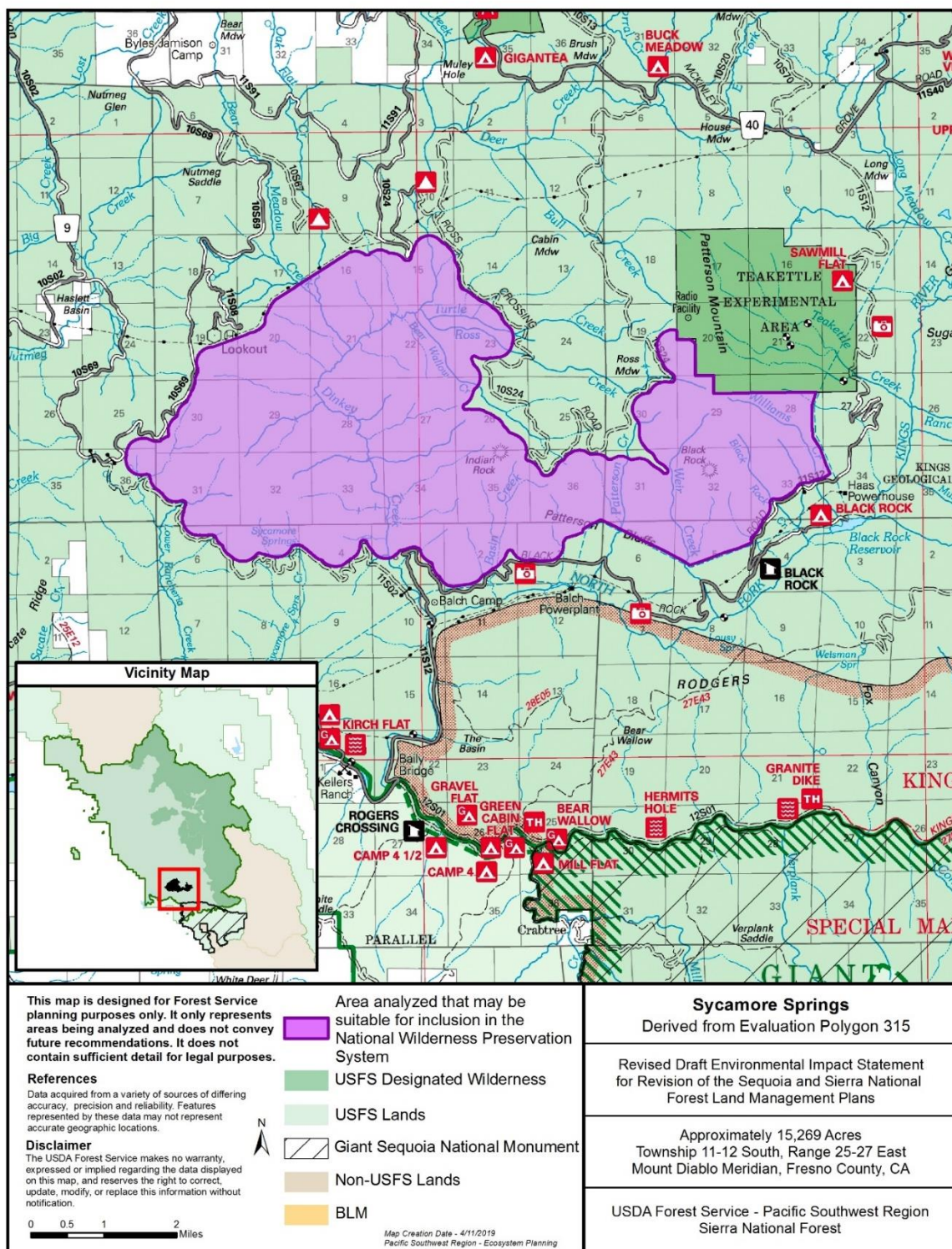
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Vegetation is not within the natural range of variation. Fire exclusion has altered the understory at lower elevations. There are areas with heavy dead and down fuel loads. Grazing occurs, possibly with fencing around some meadows. Fish stocking may also occur. Teakettle Experimental Forest has had extensive mechanical and prescribed fire treatments.
Solitude or Primitive and Unconfined Recreation	Fence Meadow Lookout would be visible from over half of the area. Motorized use and authorized forest system roads, as well as power transmission lines and developed and undeveloped recreation facilities exist just outside the boundary and limit opportunities for solitude. Opportunities for primitive and unconfined recreation exist, including canyoneering, hiking, fishing, and hunting. Whitewater kayaking also occurs.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.

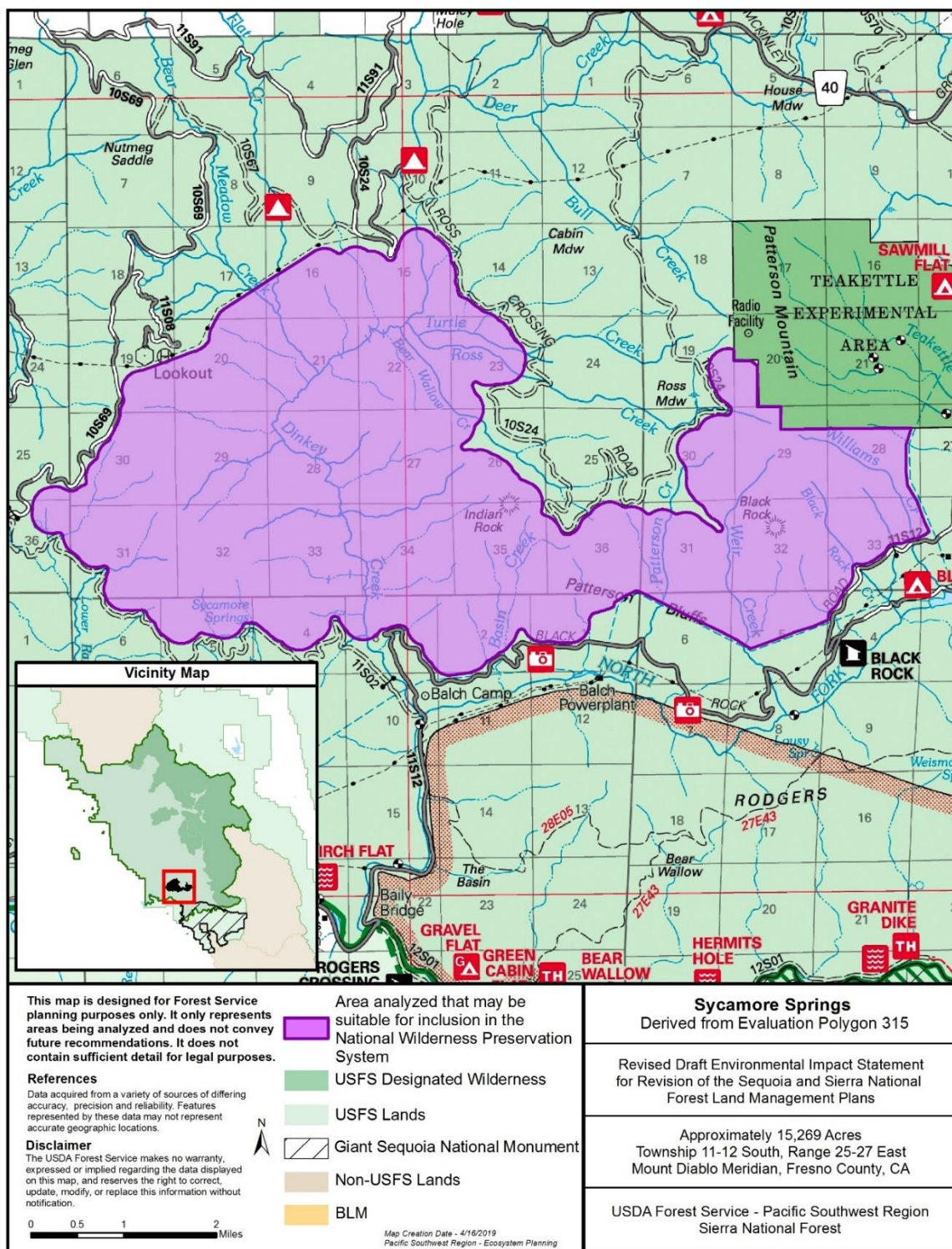
Characteristic	Description
Other Features of Value	Numerous waterfalls with eroded, deep plunge pools exist on Dinkey Creek. Black Rock, Patterson Bluffs, and Indian Rock are highly scenic granite outcrops. Cultural and historic sites. Culturally sensitive and considered by Tribes to be a special interest area.
Manageability	Teakettle Experimental Forest is mostly within the area and is managed for forest research activities, including thinning and burning of forest plots. Approximately 64 percent of the area is inventoried roadless area. Sycamore Springs Inventoried Roadless Area is almost entirely within the area. The north portion of this area is included in the Dinkey Collaborative Forest Landscape Restoration Project boundary, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands. All adjacent lands are managed by the Forest Service.

Current Uses

Teakettle Experimental Forest is mostly within the area and is managed for forest research activities, including thinning and burning of forest plots. Grazing occurs within the area. Approximately 64 percent of the area is inventoried roadless area. Sycamore Springs Inventoried Roadless Area is almost entirely within the area. Whitewater kayaking, canyoneering, hiking, fishing, and hunting. The north portion of this area is included in the Dinkey Collaborative Forest Landscape Restoration Project boundary, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands.



Map B-31. Sycamore Springs area analyzed as recommended wilderness in alternative C



Map B-32. Sycamore Springs area analyzed as recommended wilderness in alternative E

Bear Mountain

9,247 acres, derived from Evaluation Polygon 539.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.

Location and Description of Recommended Boundary

Northeast of Dinkey Creek facilities (including the Dinkey Creek Fire Station), west of the Dinkey Lakes Wilderness, and southwest of the Dinkey Lakes trailhead and Dinkey Creek Roof Pendant Geological Area (Map B-33 and Map B-34). The boundary generally follows National Forest System roads (including 9, 10S36, 10S31, 9S62, and 9S10), Swamp off-highway vehicle route, and private land.

General Geography, Topography, and Vegetation

Elevations between approximately 5,900 feet and 9,600 feet. Vegetation is composed primarily of red fir and Sierra mixed conifer forest, with substantial areas of barren ground as well as subalpine conifer, a few small lakes, and scattered meadows.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

Social: Public interest. Opportunities for solitude and primitive and unconfined recreation.

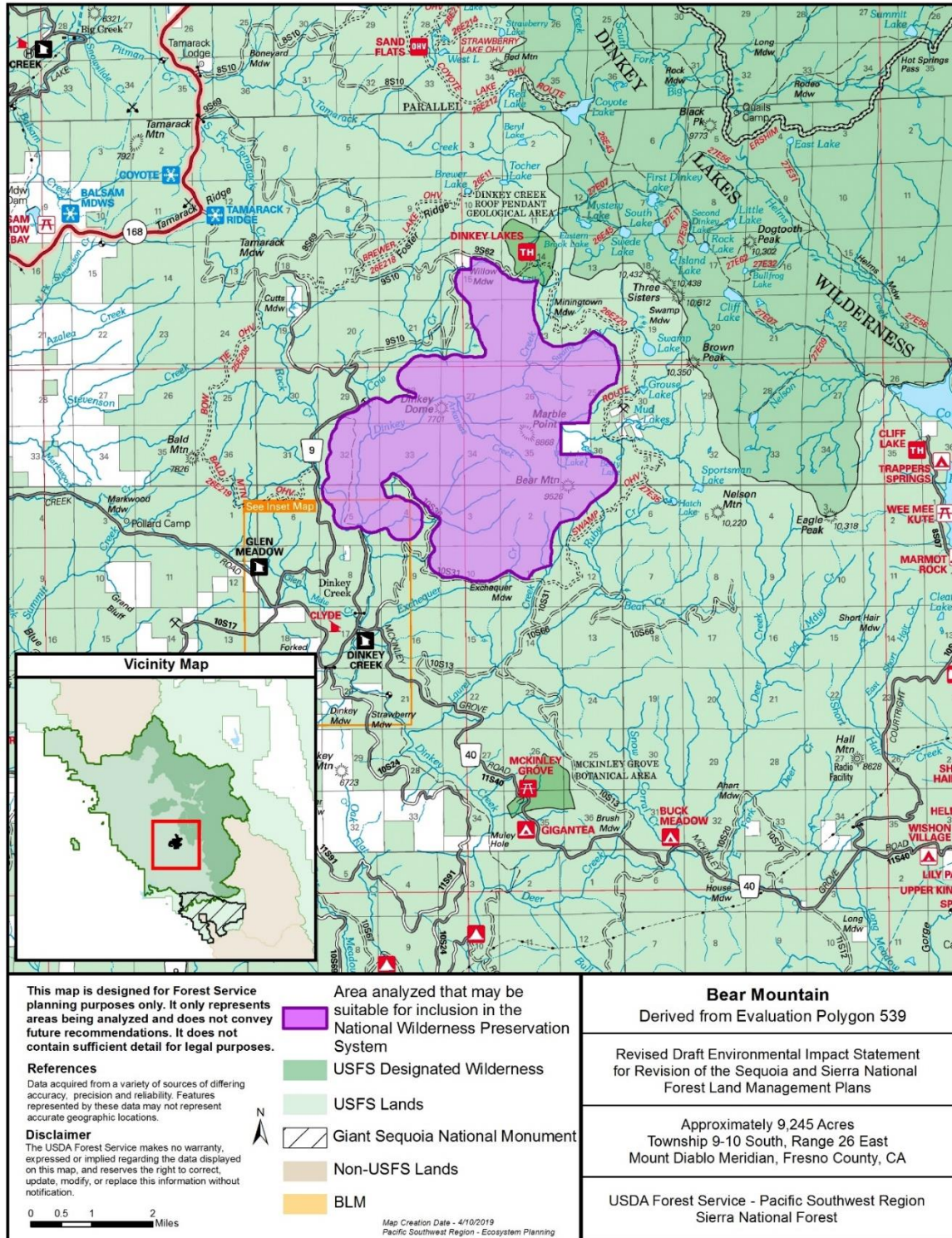
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation is within the natural range of variation. Species composition is primarily natural, except for areas that have changed due to fire exclusion. There are areas with heavy dead and down fuel loads. There are likely scattered patches of bull thistle and woolly mullein.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking, horse riding, camping, rock climbing, and hunting.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Three major geographical landmarks: Dinkey Dome, Marble Point, and Bear Mountain. This area is culturally sensitive and is considered a special interest area by Tribes in the area.

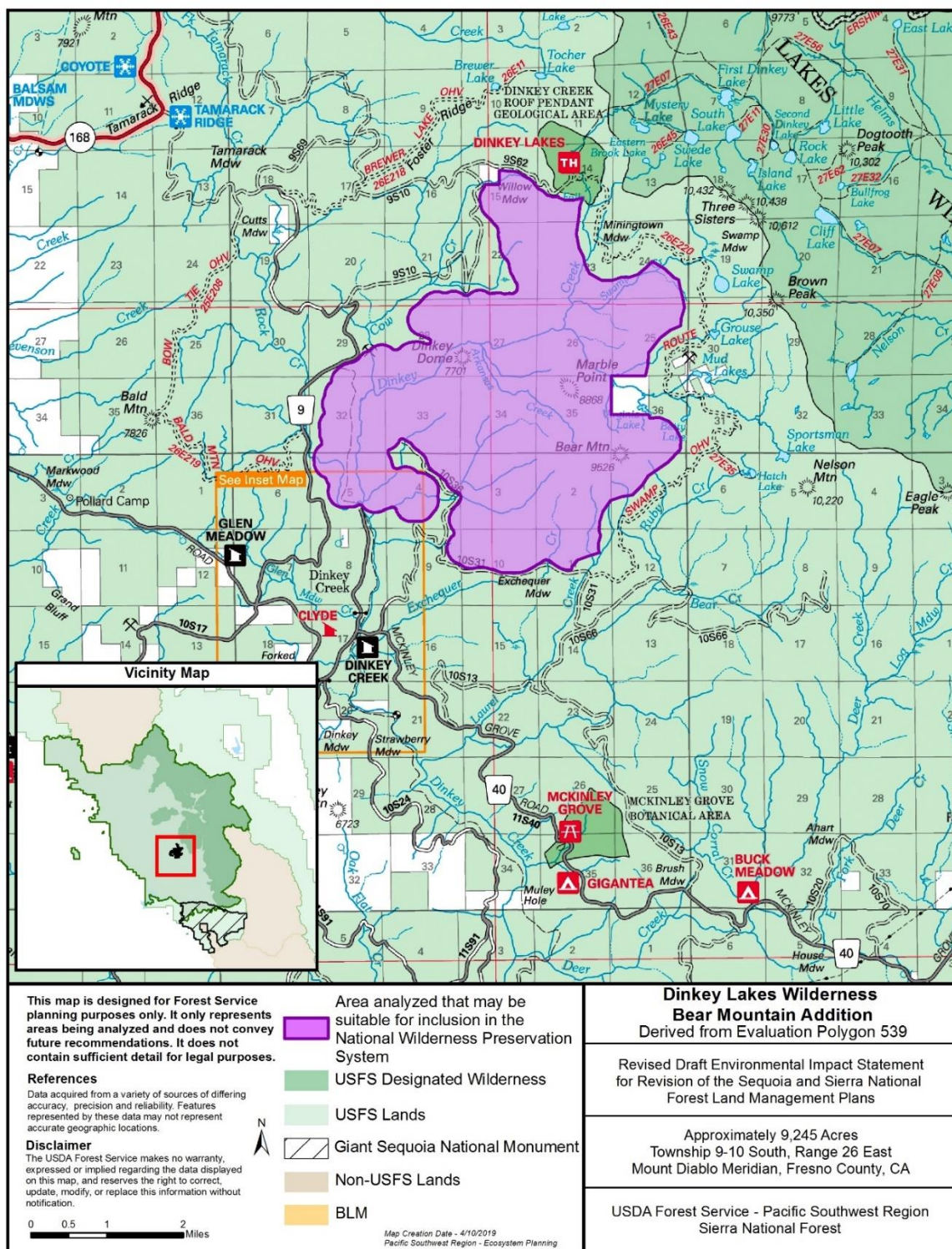
Characteristic	Description
Manageability	Approximately 64 percent of the area is inventoried roadless area. Approximately 17 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Portion is managed to restore forested areas to a healthy condition by the nationally authorized Dinkey Landscape Restoration Collaborative, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands. Over-snow vehicle trails and routes exist along the boundary and likely ride off trail into the area. Adjacent lands are private or managed by the Forest Service. Private land owner has used helicopters to access property in the past.

Current Uses

Grazing occurs within the area. Approximately 64 percent of the area is inventoried roadless area. Approximately 17 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Portion is managed to restore forested areas to a healthy condition by the nationally authorized Dinkey Landscape Restoration Collaborative, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands. Hiking, horse riding, camping, rock climbing, hunting, and general sightseeing. Over-snow vehicle trails and routes exist along the west and south boundaries and likely ride off trail into the area.



Map B-33. Bear Mountain area analyzed as recommended wilderness in alternative C



Map B-34. Dinkey Lakes Bear Mountain Addition area analyzed as recommended wilderness in alternative E

Dinkey Lakes Wilderness Additions (1)

8,317 acres, derived from Evaluation Polygon 539.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Northwest of the Dinkey Lakes Wilderness, east of Huntington Lake and National Forest System Road 80 (Map B-35). The east boundary generally follows the Dinkey Lakes Wilderness boundary. The remainder of the boundary generally follows Dusy-Ershim off-highway vehicle route, National Forest System roads (including 7S32, 80, 7S36A, 5S80M, 8S31, 26E61, 8S22A, 8S42, 26E214, and 26E216). The boundary is set back from China Peak ski area as well as Midge Creek and Badger Flat campgrounds.

General Geography, Topography, and Vegetation

Elevations between approximately 7,000 feet and 10,000 feet. Vegetation is composed primarily of red fir and subalpine conifer, with substantial amounts of montane chaparral as well as scattered meadows and a few small lakes.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

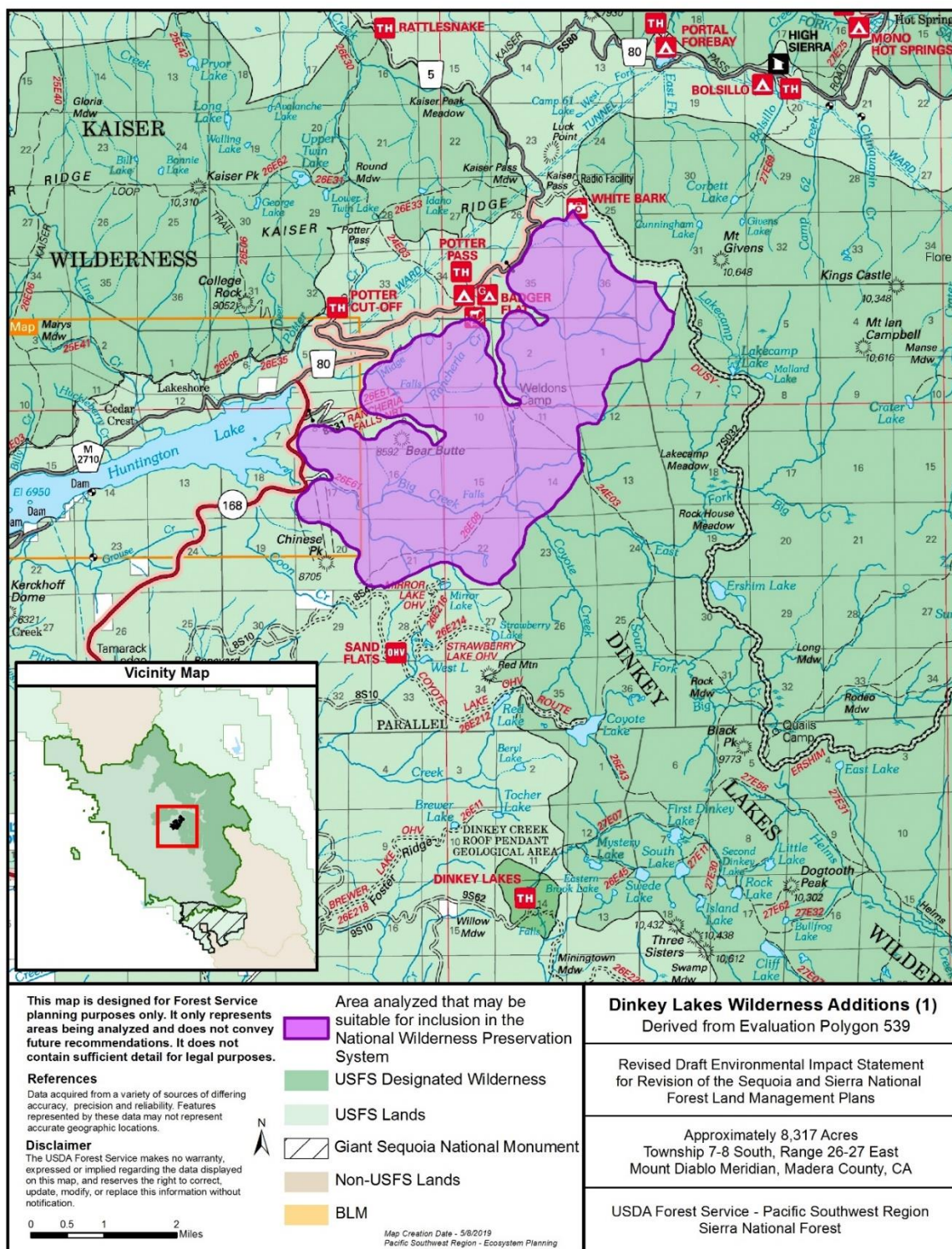
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation is within the natural range of variation. Species composition is primarily natural, except for areas that have changed due to fire exclusion. There are areas with heavy dead and down fuel loads. There are likely scattered patches of bull thistle and woolly mullein.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking, horse riding, camping, rock climbing, and hunting. A primary trail accessing the northern portion of the Dinkey Lakes Wilderness crosses the area from Badger Flat trailhead.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	This area is culturally sensitive and is considered a special interest area by Tribes in the area.

Characteristic	Description
Manageability	Approximately 76 percent of the area is inventoried roadless area. Approximately 19 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Southern 25 percent is managed to restore forested areas to a healthy condition by the nationally authorized Dinkey Landscape Restoration Collaborative, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands. Popular winter snow trails exist on the west and south boundaries. Over-snow vehicle trails and routes exist along the boundary and are partly within the north and west boundaries. Over-snow vehicles commonly ride off trail into the area. All adjacent lands are managed by the Forest Service.

Current Uses

Approximately 76 percent of the area is inventoried roadless area. Approximately 19 percent of Dinkey Lakes Inventoried Roadless Area is within the area. The southern 25 percent is managed to restore forested areas to a healthy condition by the nationally authorized Dinkey Landscape Restoration Collaborative, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands. Hiking, horse riding, camping, rock climbing, hunting, and general sightseeing. A primary trail accessing the northern portion of the Dinkey Lakes Wilderness crosses the area from Badger Flat trailhead. Popular winter snow trails exist along the west and south boundaries and are partly within the north and west boundaries. Over-snow vehicles commonly ride off trail into the area.



Map B-35. Dinkey Lakes Wilderness Additions (1) area analyzed as recommended wilderness in alternative C

Dinkey Lakes Wilderness Additions (2)

4,178 acres, derived from Evaluation Polygon 539.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

West of the Dinkey Lakes Wilderness and north of the Dinkey Lakes trailhead (Map B-36). The east boundary follows the Dinkey Lakes Wilderness boundary. The remainder of the boundary generally follows the Swamp, Brewer, and Coyote off-highway vehicle routes, as well as National Forest System roads (including 9S62, 9S30, 8S38, and 8S10). The boundary is set back from Dinkey Lakes trailhead.

General Geography, Topography, and Vegetation

Elevations between approximately 7,400 feet and 9,700 feet. Vegetation is composed primarily of subalpine conifer and red fir as well as scattered meadows and a few small lakes.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

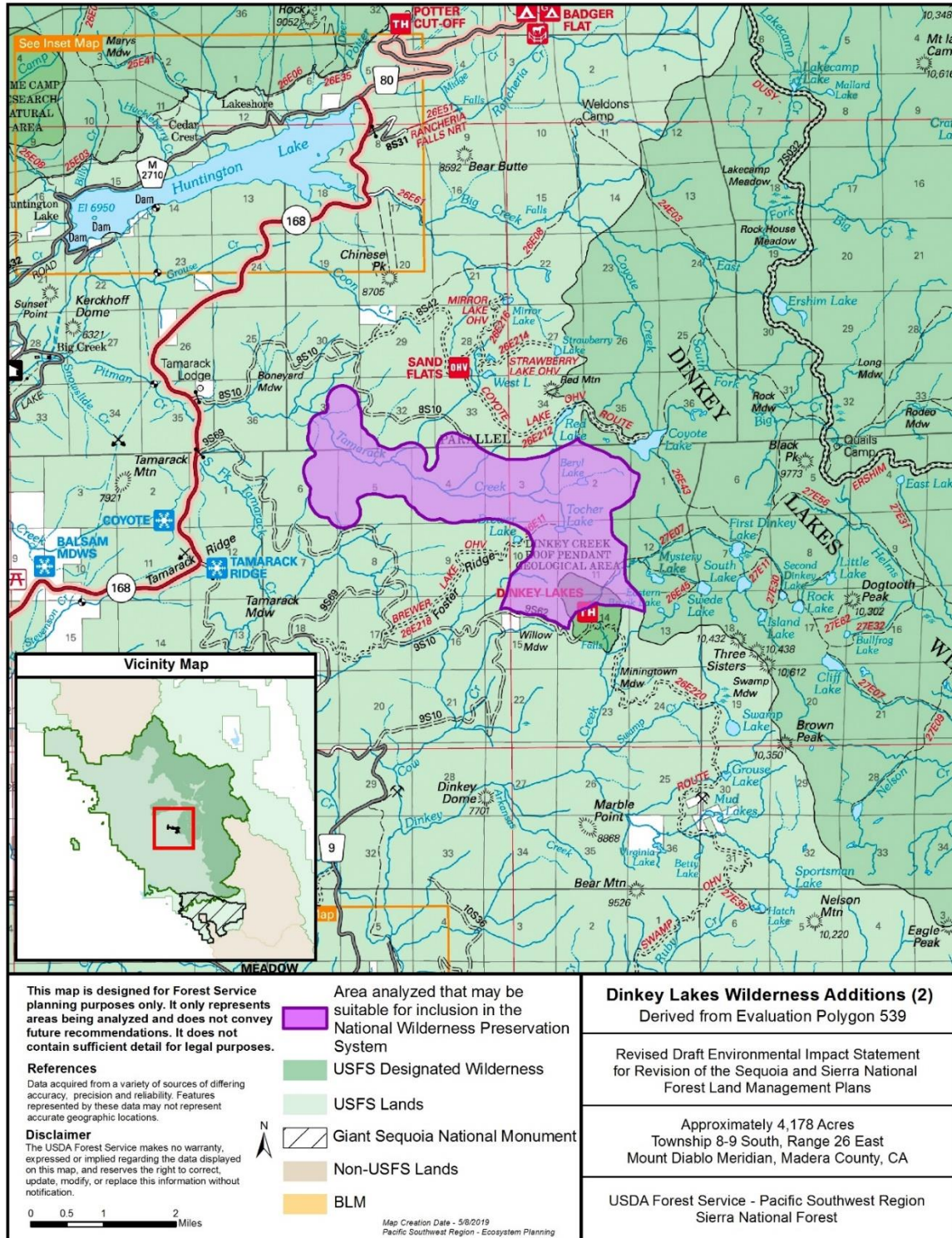
Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation is within the natural range of variation. Species composition is primarily natural, except for areas that have changed due to fire exclusion. There are areas with heavy dead and down fuel loads. There are likely scattered patches of bull thistle and woolly mullein.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking, horse riding, camping, rock climbing, and hunting.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	This area is culturally sensitive and is considered a special interest area by Tribes in the area.
Manageability	Approximately 58 percent of the area is inventoried roadless area. Approximately 7 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Popular winter snow trails exist on the west and south boundaries. Over-snow vehicle trails and routes exist along the boundary and commonly ride off trail into the area. All adjacent lands are managed by the Forest Service.

Current Uses

Grazing occurs within the area. Approximately 58 percent of the area is inventoried roadless area. Approximately 7 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Hiking, horse riding, camping, rock climbing, hunting and general sightseeing. Popular winter snow trails exist along the north, west, and south boundaries and over-snow vehicles commonly ride off trail into the area.



Map B-36. Dinkey Lakes Wilderness Additions (2) area analyzed as recommended wilderness in alternative C

Dinkey Lakes Wilderness Additions (3)

16,318 acres, derived from Evaluation Polygon 539.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

South of the Dinkey Lakes Wilderness, west of Courtwright Reservoir, north of National Forest System Road 40, and east of the Swamp off-highway vehicle route (Map B-37). The north boundary generally follows the Dinkey Lakes Wilderness boundary and Courtwright Reservoir. The remainder of the boundary generally follows National Forest System roads (including 8S07, 10S16, 10S73, 10S78, 10S23, 10S32, and 10S66), the Swamp off-highway vehicle route, and private land. The boundary is set back from Cliff Lake trailhead.

General Geography, Topography, and Vegetation

Elevations between approximately 7,100 feet and 10,600 feet. Vegetation is composed primarily of subalpine conifer and red fir, with some Sierra mixed conifer and some barren ground.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

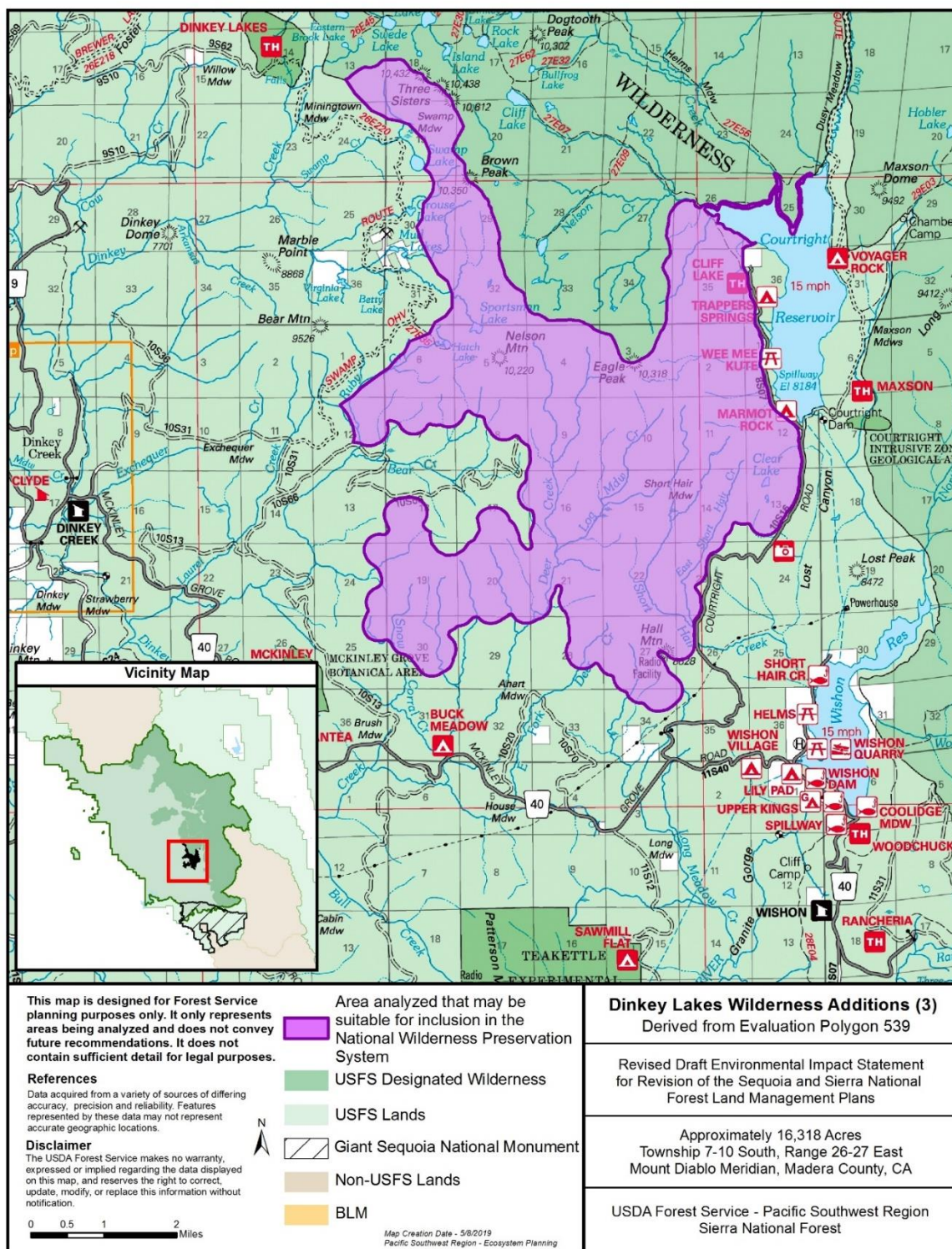
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation is within the natural range of variation. Species composition is primarily natural, except for areas that have changed due to fire exclusion. There are areas with heavy dead and down fuel loads. There are likely scattered patches of bull thistle and woolly mullein.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist, including hiking, horse riding, camping, rock climbing, and hunting.
If less than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	This area is culturally sensitive and is considered a special interest area by Tribes in the area.

Characteristic	Description
Manageability	Approximately 66 percent of the area is inventoried roadless area. Approximately 31 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Western 50 percent is managed to restore forested areas to a healthy condition by the nationally authorized Dinkey Landscape Restoration Collaborative, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands. Portion of the Snow Corral over-snow vehicle loop is within the southeast boundary. Over-snow vehicles commonly ride off trail into the area. Adjacent lands are private or managed by the Forest Service.

Current Uses

Approximately 66 percent of the area is inventoried roadless area. Approximately 31 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Western 50 percent is managed to restore forested areas to a healthy condition by the nationally authorized Dinkey Landscape Restoration Collaborative, a committee composed of many stakeholders that designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands. Hiking, horse riding, camping, rock climbing, hunting and general sightseeing. A portion of the Snow Corral over-snow vehicle loop is within the southeast boundary. Over-snow vehicles commonly ride off trail into the area.



Map B-37. Dinkey Lakes Wilderness Additions (3) area analyzed as recommended wilderness in alternative C

Shuteye

14,418 acres, derived from Evaluation Polygon 646.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.

Location and Description of Recommended Boundary

North and east of Shuteye Peak Lookout, south and west of National Forest System roads 7 (Beasore Road), 6S01, and 81 (Minarets Road), and includes Chiquito Ridge, Little Shuteye Peak, and Chilkoot Lake (Map B-38). The boundary generally follows National Forest System roads and routes (including 6S59, 7S02, 6S25X, 7S15Y, 6S66, 6S539, 81, 6S35, 6S502, 6S01M, 6S23, 6S06Y, 6S05Y, 6S69, 6S03YB, 6S01H, 6S26X, 6S42, and 6S18).

General Geography, Topography, and Vegetation

Elevations between approximately 4,400 feet and 8,300 feet. Vegetation is composed primarily of Sierra mixed conifer, red fir forest, and montane chaparral with areas of barren ground and granite domes.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

Social: Public interest. Opportunities for solitude and primitive and unconfined recreation.

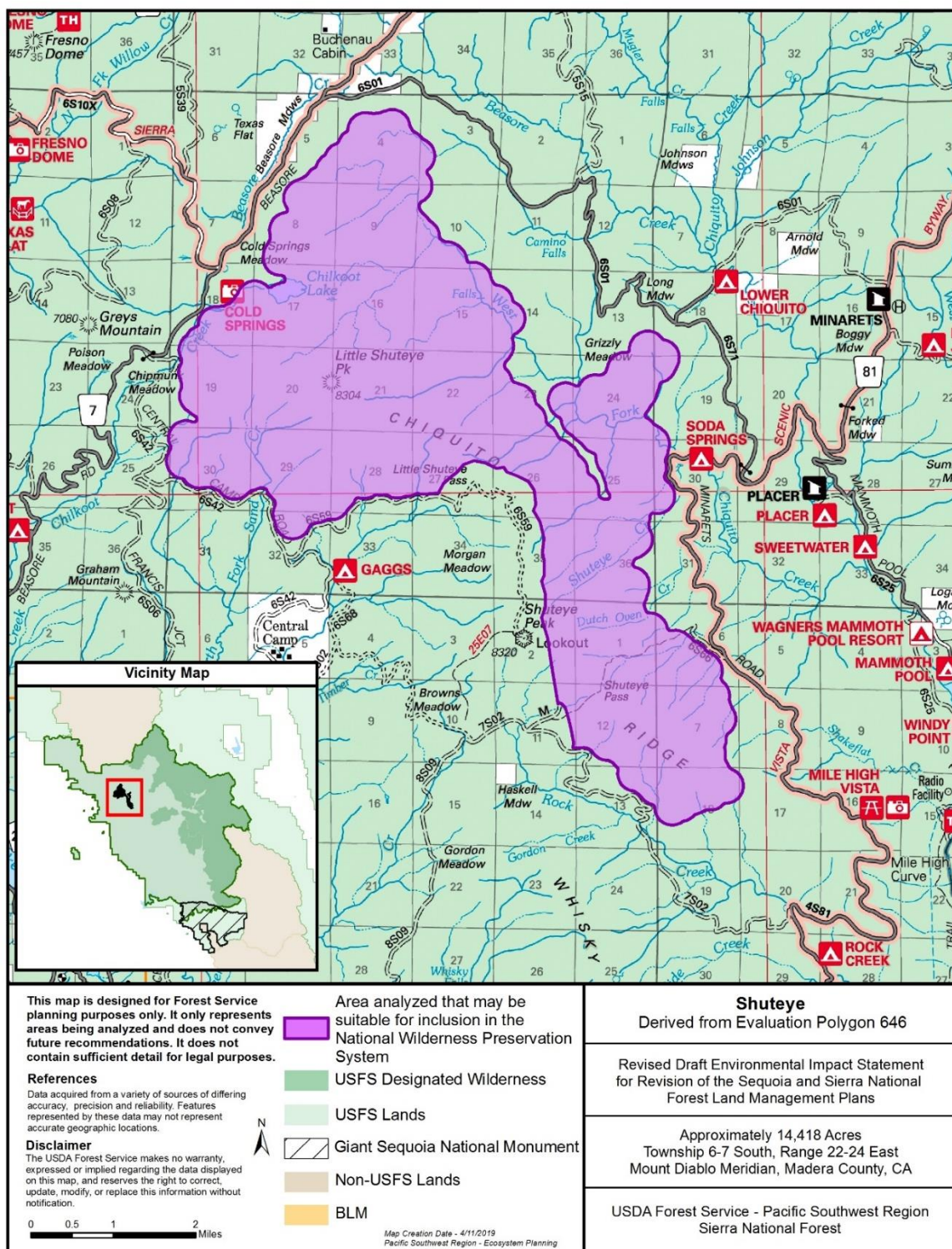
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation in the northern portion is within the natural range of variation. The southern portion was affected by the 2014 French Fire with potential remnants from suppression actions including both hand and mechanical direct and indirect fire line construction. There are areas with heavy dead and down fuel loads due to fire suppression. There are likely scattered patches of bull thistle and woolly mullein.
Solitude or Primitive and Unconfined Recreation	Opportunities for primitive recreation exist, including hiking, rock climbing, hunting, and fishing. One hiking trail exists within the area.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Unique aquatic and emergent flora around Chilkoot Lake. This area is culturally sensitive and is considered a special interest area by Tribes in the area. There are cultural and historical sites throughout the area.

Characteristic	Description
Manageability	Approximately 50 percent of the area is inventoried roadless area. Shuteye Inventoried Roadless Area is almost entirely within the area. Chilkoot Lake is part of the PG&E Crane Valley project. A ditch diverts water into Chilkoot Lake and controls lake water levels. On the northwest shore of Chilkoot Lake there is vehicle access to a popular dispersed camping area just outside the boundary. All adjacent lands are managed by the Forest Service.

Current Uses

Grazing occurs within the area. Approximately 50 percent of the area is inventoried roadless area. Shuteye Inventoried Roadless Area is almost entirely within the area. One hiking trail exists within the area, 24E08, crossing over Shuteye Pass. Hiking, rock climbing, hunting, fishing, gold panning, and sightseeing. Chilkoot Lake is part of the PG&E Crane Valley project. A ditch diverts water into Chilkoot Lake and controls lake water levels. On the northwest shore of Chilkoot Lake there is vehicle access to a popular dispersed camping area just outside the boundary.



Map B-38. Shuteye area analyzed as recommended wilderness in alternative C

Devil Gulch

37,325 acres, derived from Evaluation Polygon 772.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.

Location and Description of Recommended Boundary

Near the northwest corner of the Sierra National Forest (west of Wawona and Yosemite West and south of California State Highway 140) and includes a portion of the South Fork Merced Wild and Scenic River (Map B-39 and Map B-40). The east boundary generally follows the Yosemite National Park boundary and private land (including the community of Yosemite West). The north boundary generally follows private land (including the community of El Portal), a road up to Pinoche Ridge, and California State Highway 140. The west boundary generally follows the Hite Cover off-highway vehicles route and National Forest System roads, and private land. The south boundary generally follows National Forest System roads (including 5S25, 4S31, 4S04, and 4S17). The boundary is set back from Indian Flat picnic area as well as Savage Lundy, Virginia Creek, and Rush Creek trailheads.

General Geography, Topography, and Vegetation

Steep and rugged terrain with brush and forested slopes rising steeply out of the South Fork Merced River canyon, with elevations between approximately 1,700 feet and 6,900 feet. Vegetation is composed primarily of oak woodland, mixed conifers, and ponderosa pine.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Devils Peak Botanical Area. Bishop Creek Pacific Ponderosa Pine Research Natural Area. South Fork Merced Wild and Scenic River.

Social: Public interest. Opportunities for solitude and primitive and unconfined recreation.

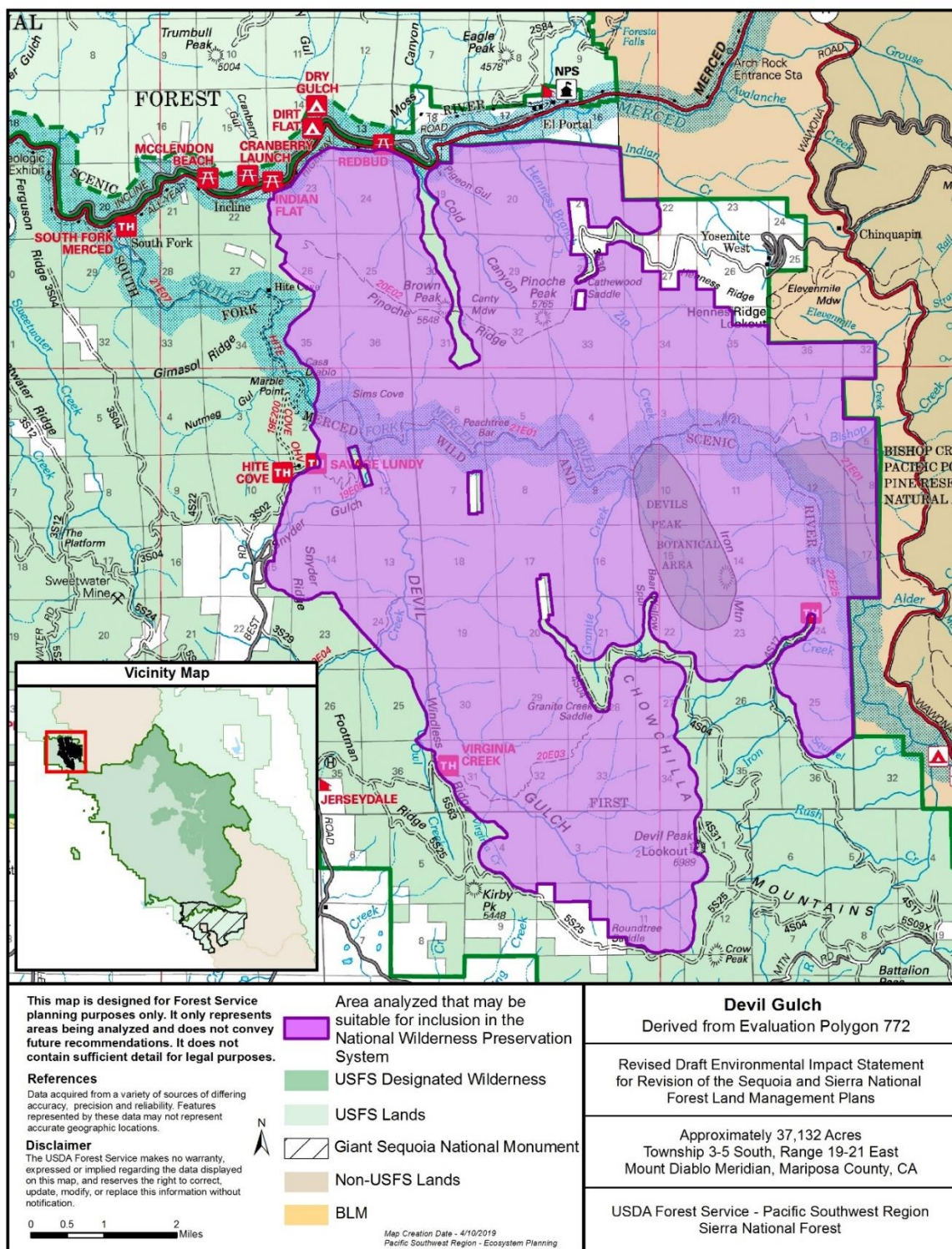
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Intact condition of the ecosystem types.
Solitude or Primitive and Unconfined Recreation	Very rugged terrain provides opportunities for solitude and primitive and unconfined recreation. Whitewater boating occurs on the South Fork of the Merced River. Approximately 20 miles of lightly-used non-motorized trails.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Devils Peak Botanical Area. Bishop Creek Pacific Ponderosa Pine Research Natural Area. South Fork Merced Wild and Scenic River. Includes traditional areas used by the South Fork Merced MiWuk people to conduct gathering for basket weaving and tribal burial areas.

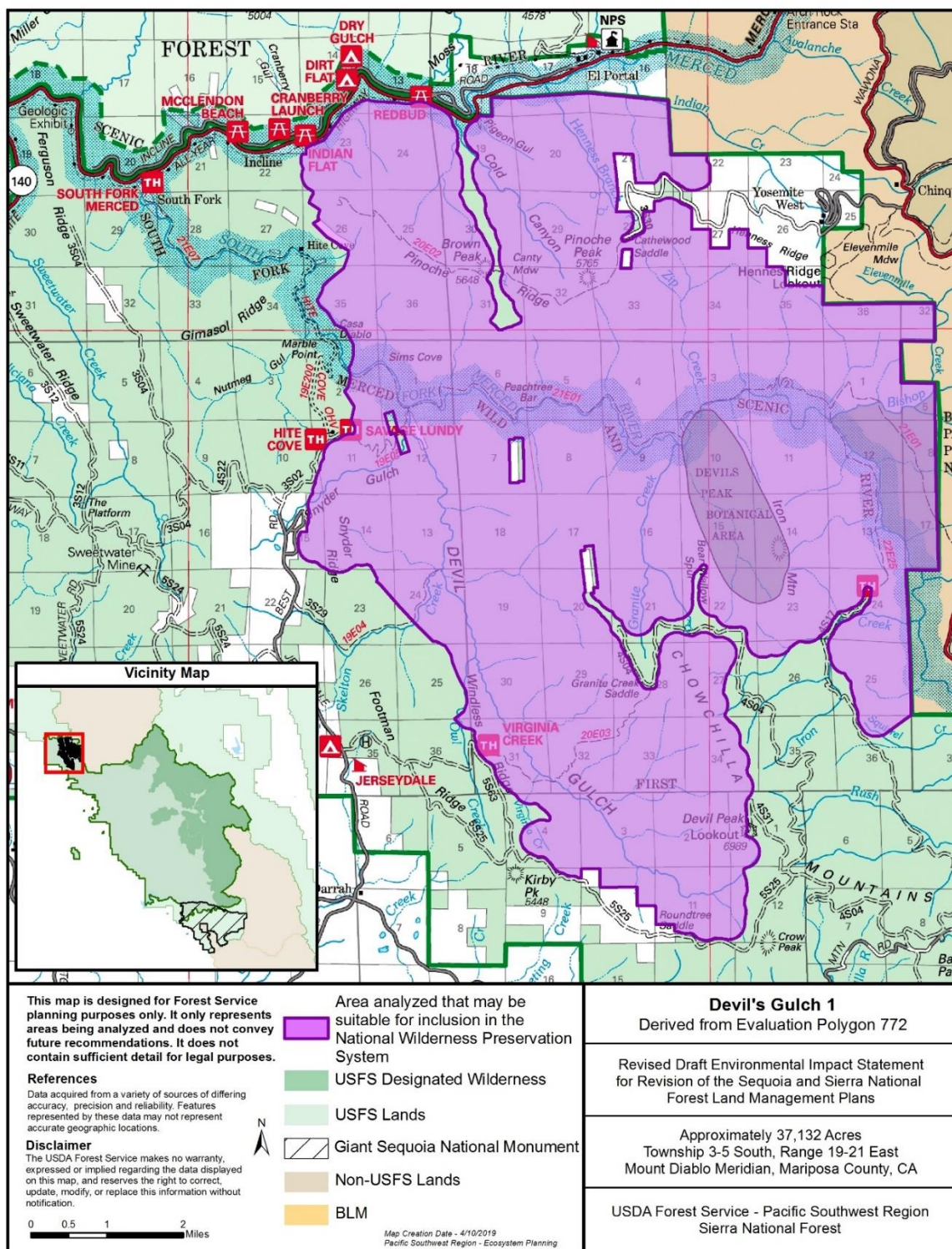
Characteristic	Description
Manageability	Approximately 80 percent of the area is inventoried roadless area. Approximately 97 percent of Devil Gulch Inventoried Roadless Area is within the area. Devils Peak Botanical Area and Bishop Creek Pacific Ponderosa Pine Research Natural Area are entirely within the area. Portion of South Fork Merced Wild and Scenic River is within the area. One mining claim in lower Devil Gulch. Three private inholdings. Potential for large fires that are likely to be aggressively suppressed due to the proximity to the Yosemite West community and other private property. It is likely that dozers and other motorized equipment would be extensively used to suppress fires. Adjacent lands are private or managed by the Forest Service or the National Park Service.

Current Uses

Approximately 80 percent of the area is inventoried roadless area. Approximately 97 percent of Devil Gulch Inventoried Roadless Area is within the area. Portion of South Fork Merced Wild and Scenic River is within the area. Whitewater rafting is popular on the Merced River, along the north boundary of the area. Whitewater boating also occurs on the South Fork of the Merced River. Approximately 20 miles of non-motorized trails are lightly used by hikers, hunters, and anglers and have received little or no maintenance in recent years. Devils Peak Botanical Area and Bishop Creek Pacific Ponderosa Pine Research Natural Area are entirely within the area. The area includes traditional areas used by the South Fork Merced MiWuk people to conduct gathering for basket weaving and tribal burial areas.



Map B-39. Devil Gulch area analyzed as recommended wilderness in alternative C



Map B-40. Devil's Gulch 1 area analyzed as recommended wilderness in alternative E

Ferguson Ridge

7,800 acres, derived from Evaluation Polygon 772.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.

Location and Description of Recommended Boundary

In the northwestern most corner of the Sierra National Forest (south of California State Highway 140) and includes a portion of the South Fork Merced Wild and Scenic River (Map B-41 and Map B-42). The west boundary generally follows Bureau of Land Management land and private land. The remainder of the boundary follows private land, California State Highway 140, and National Forest System roads. The boundary is set back from South Fork Merced and Hite Cove trailheads.

General Geography, Topography, and Vegetation

Steep and rugged terrain with brush and forested slopes rising steeply out of the South Fork Merced River canyon, with elevations between approximately 1,400 feet and 4,200 feet. Vegetation is composed primarily of chamise redshank chaparral and oak woodland.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. South Fork Merced Wild and Scenic River.

Social: Public interest. Opportunities for solitude and primitive and unconfined recreation.

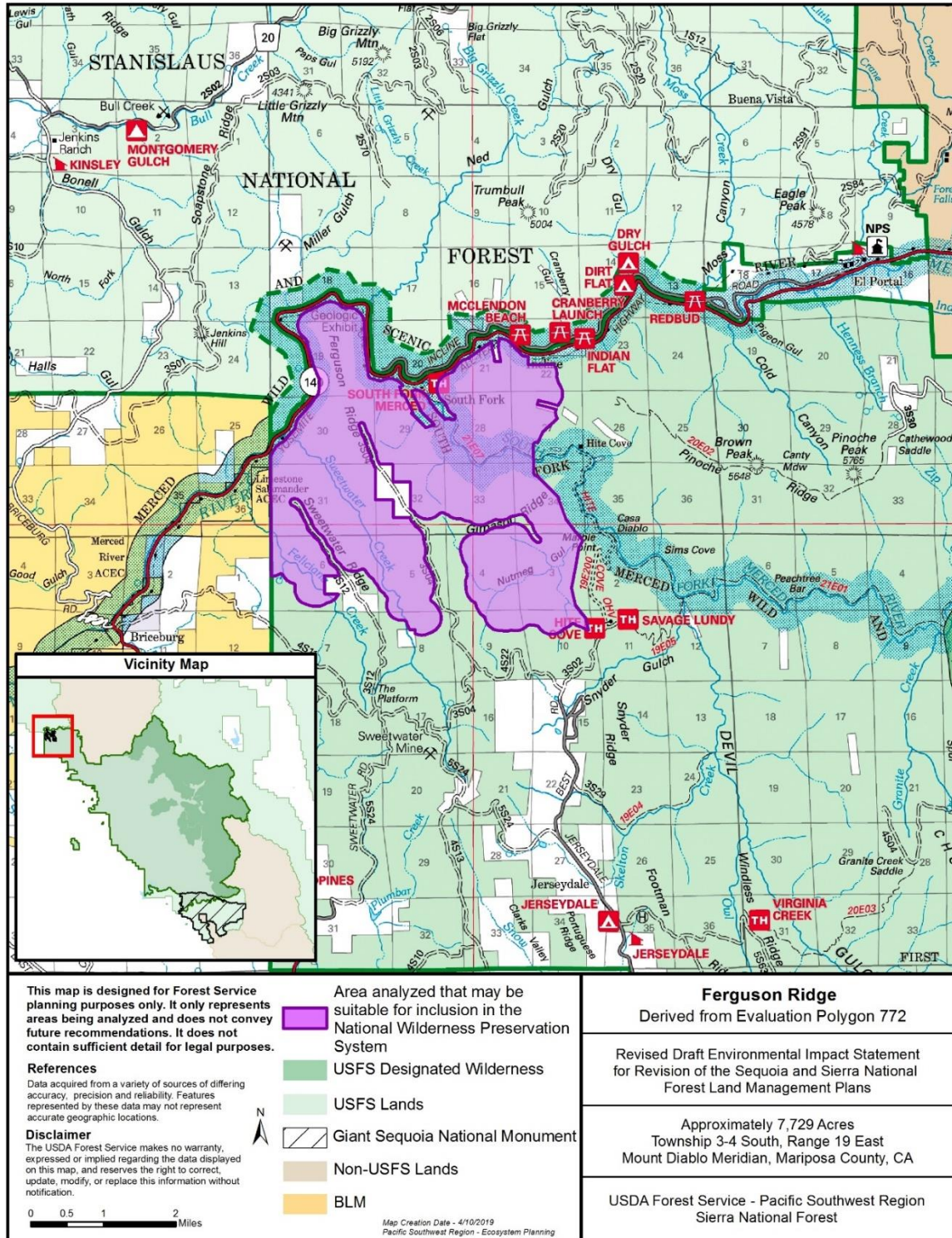
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Fires have burned in this area, traveling rapidly with high intensity and leaving little to no vegetation remaining. Conifer plantations are scattered throughout the area. Vegetation treatments occur within plantations, as well as outside of the plantations. Fuel breaks in lower elevation areas near the Merced River and Highway 140 and on Felciana, Sweetwater, and Ferguson ridges have been constructed to reduce manzanita and chamise growth. Prescribed burning has been conducted in the Gimasol and Nutmeg Gulch area. Past fire lines, plantations, and vegetation treatments continue to be highly visible.
Solitude or Primitive and Unconfined Recreation	Very rugged terrain provides opportunities for solitude and primitive and unconfined recreation. Whitewater boating occurs on the South Fork of the Merced River. A hiking trail is popular for viewing spring wildflowers.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	South Fork Merced Wild and Scenic River. Includes traditional areas used by the South Fork Merced MiWuk people to conduct gathering for basket weaving and tribal burial areas.

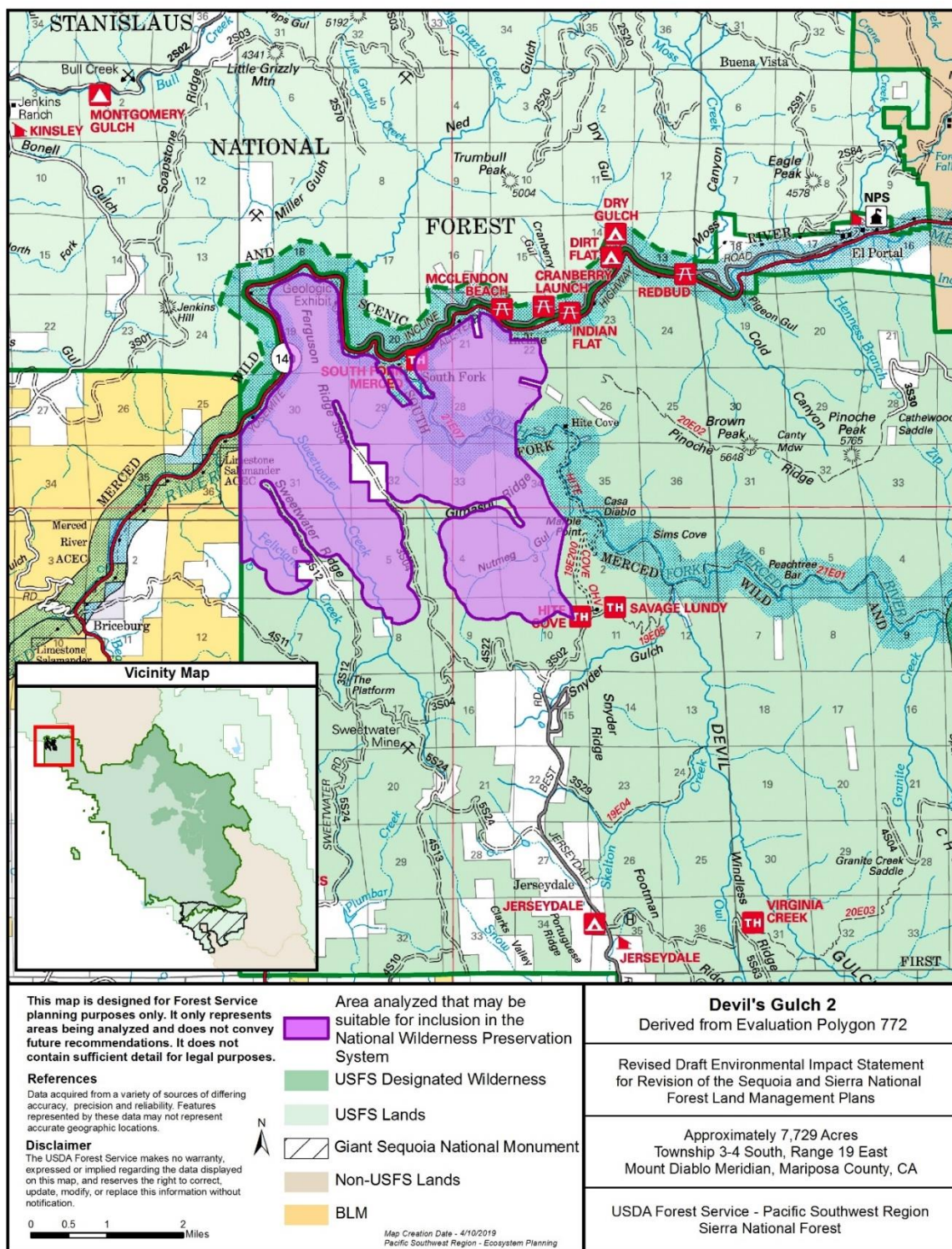
Characteristic	Description
Manageability	Approximately 68 percent of the area is inventoried roadless area. Approximately 86 percent of Ferguson Ridge Inventoried Roadless Area is within the area. Portion of South Fork Merced Wild and Scenic River is within the area. Adjacent lands are private or managed by the Forest Service or the Bureau of Land Management.

Current Uses

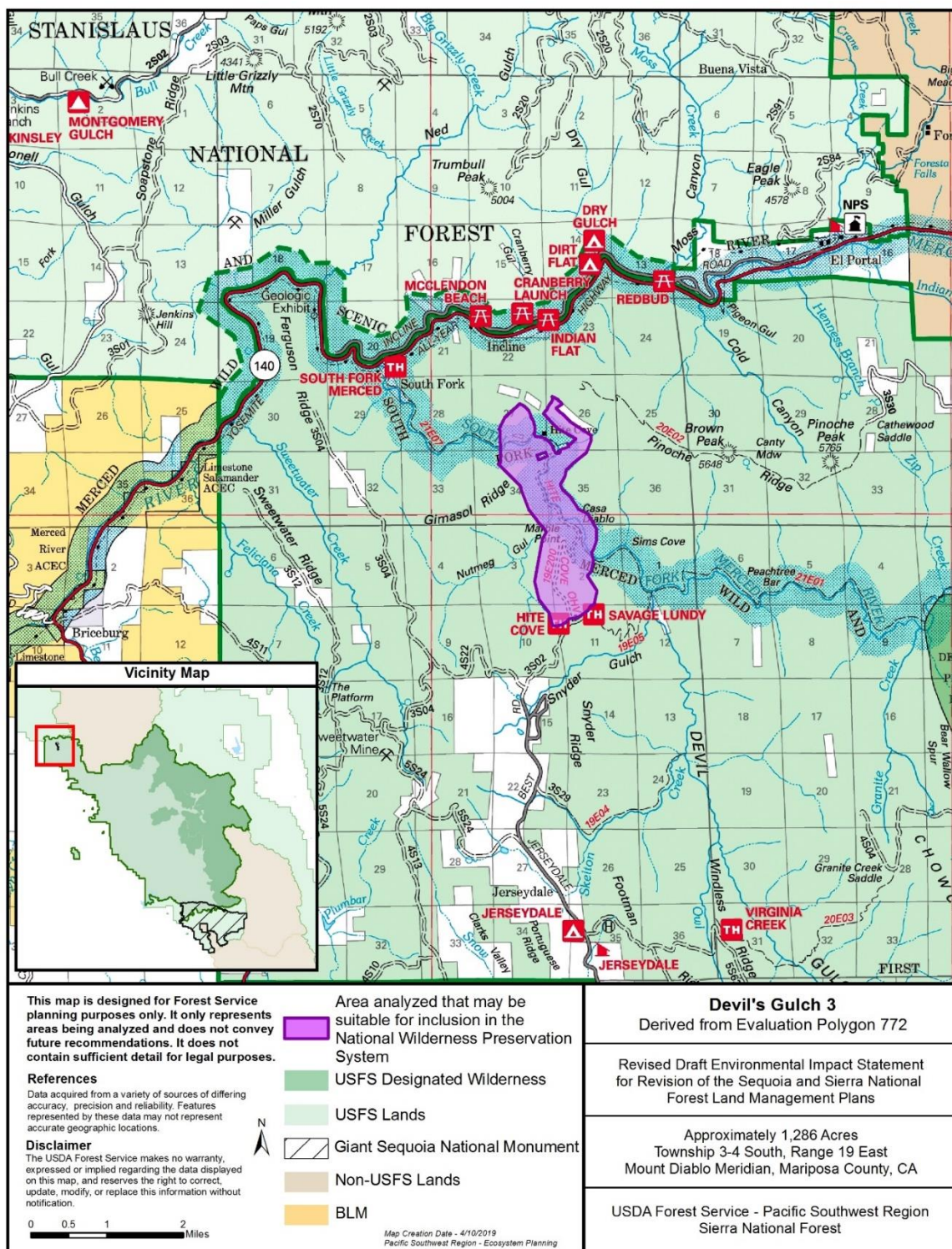
Approximately 68 percent of the area is inventoried roadless area. Approximately 86 percent of Ferguson Ridge Inventoried Roadless Area is within the area. Portion of South Fork Merced Wild and Scenic River is within the area. Whitewater rafting is popular on the Merced River, along the north boundary of the area. Whitewater boating also occurs on the South Fork of the Merced River. A hiking trail leads from California State Highway 140 along the South Fork of the Merced River and is popular for viewing spring wildflowers. A geologic exhibit is in the northern portion of the area. The area includes traditional areas used by the South Fork Merced MiWuk people to conduct gathering for basket weaving and tribal burial areas.



Map B-41. Ferguson Ridge area analyzed as recommended wilderness in alternative C



Map B-42. Devil's Gulch 2 area analyzed as recommended wilderness in alternative E



Map B-43. Devil's Gulch 3 area analyzed as recommended wilderness in alternative E

John Muir Wilderness Additions – West (1)

1,299 acres, derived from Evaluation Polygon 797.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Endangered species and habitat (Yosemite toad and Yellow-legged frog).
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Northeast of Florence Lake, near the High Sierra Ranger Station and the intersection of National Forest System Road 80 (Kaiser Pass Road) with 7S01 (to Florence Lake) (Map B-44). The south boundary follows the John Muir Wilderness boundary. The remainder of the boundary generally follows Ward Tunnel (hydroelectric penstock) and Kaiser Pass Road. The area is nearly contiguous with John Muir Wilderness Additions – West (2), separated only by the Ward Tunnel corridor. The boundary is set back from Portal Forebay 2 campground as well as Bolsillo campground and trailhead.

General Geography, Topography, and Vegetation

Steep forested slopes and granite slabs with elevations rising from approximately 7,300 feet (Portal Forebay 2 campground and Kaiser Pass Road) to approximately 8,800 feet (where Ward Tunnel crosses the existing John Muir Wilderness boundary). Vegetation is composed primarily of Sierra mixed conifer and red fir.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Endangered species and habitat (Yosemite toad and Yellow-legged frog).

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

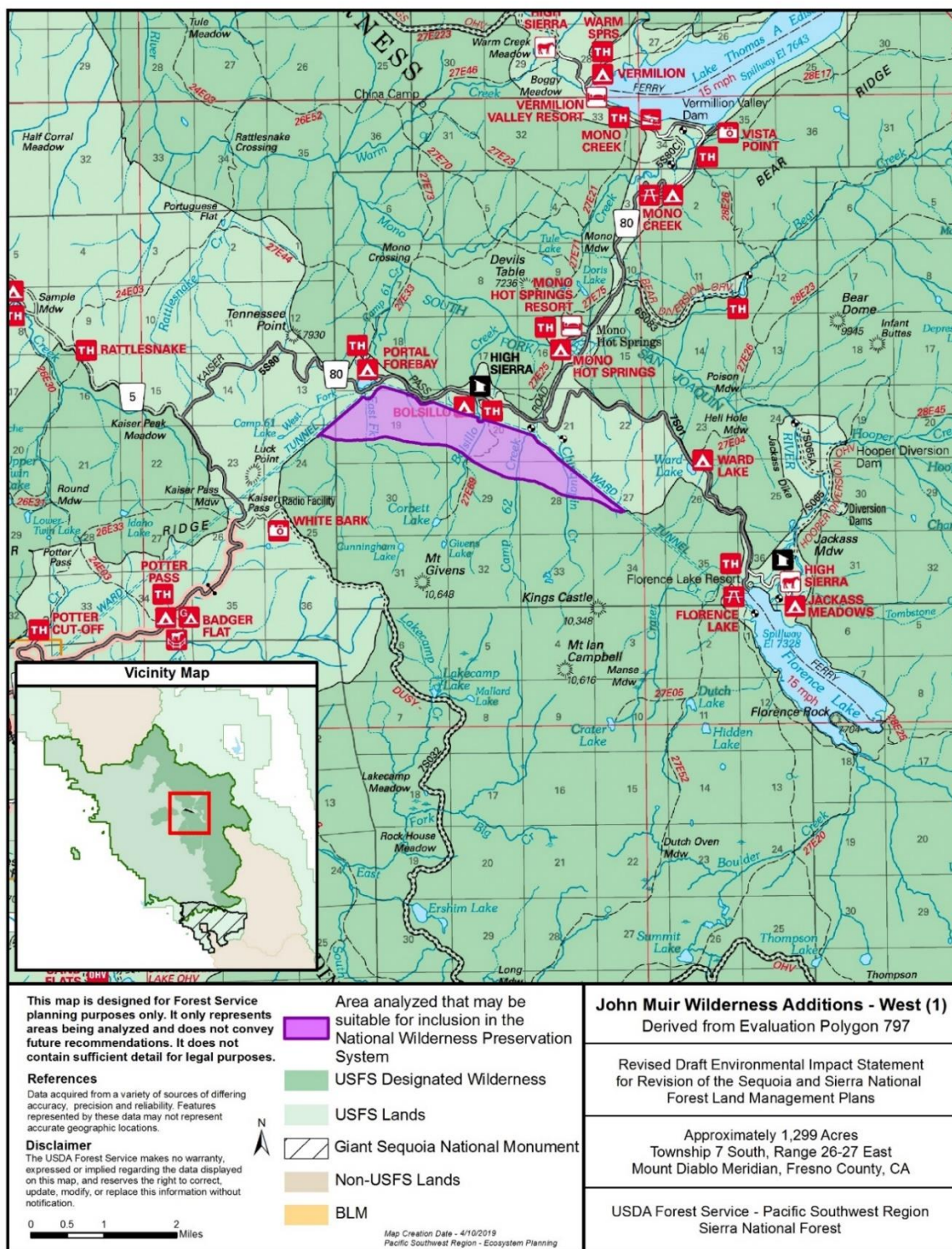
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Vegetation appears natural and is within the natural range of variation.
Solitude or Primitive and Unconfined Recreation	Sounds from roads outside the boundaries are audible and in some places roads are visible, however opportunities for solitude and primitive and unconfined recreation exist. Corbett Lake Trail crosses the area from Bolsillo campground to access the John Muir Wilderness.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.

Characteristic	Description
Other Features of Value	Endangered species and habitat (Yosemite toad and Yellow-legged frog). This area is culturally sensitive and is considered a special interest area by Tribes in the area.
Manageability	Approximately 96 percent of the area is inventoried roadless area. Approximately 4 percent of Dinkey Lakes Inventoried Roadless Area is within the area. All adjacent lands are managed by the Forest Service.

Current Uses

Approximately 96 percent of the area is inventoried roadless area. Approximately 4 percent of Dinkey Lakes Inventoried Roadless Area is within the area. Corbett Lake Trail crosses the area from Bolsillo campground to access the John Muir Wilderness and receives annual maintenance. Within a vacant cattle grazing allotment. A portion of the area near Portal Forebay is used to hold cattle overnight as they are being driven to the Mono and Cassidy Allotments near Lake Edison.



Map B-44. John Muir Wilderness Additions – West (1) area analyzed as recommended wilderness in alternative C

John Muir Wilderness Additions – West (2)

1,206 acres, derived from Evaluation Polygon 795.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Endangered species and habitat (Yosemite toad and Yellow-legged frog).
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Northeast of Florence Lake, near the High Sierra Ranger Station and the intersection of National Forest System Road 80 (Kaiser Pass Road) with 7S01 (Florence Lake Road) (Map B-45). The south boundary generally follows the John Muir Wilderness boundary. The west boundary follows Ward Tunnel (hydroelectric penstock). The north and east boundaries generally follow Florence Lake Road and Kaiser Pass Road to Bolsillo Campground and National Forest System Road 80H. The area is nearly contiguous with John Muir Wilderness Additions – West (1), separated only by the Ward Tunnel corridor. The boundary is set back from Bolsillo campground and trailhead.

General Geography, Topography, and Vegetation

Steep forested slopes and granite slabs with elevations rising from approximately 7,200 feet (Kaiser Pass Road and Florence Lake road) to approximately 8,900 feet (where Ward Tunnel crosses the existing John Muir Wilderness boundary). Vegetation is composed primarily of Sierra mixed conifer, Jeffrey pine, and montane chaparral.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Endangered species and habitat (Yosemite toad and Yellow-legged frog).

Social: Public interest. Contiguous with designated wilderness. Intact condition of the ecosystem types.

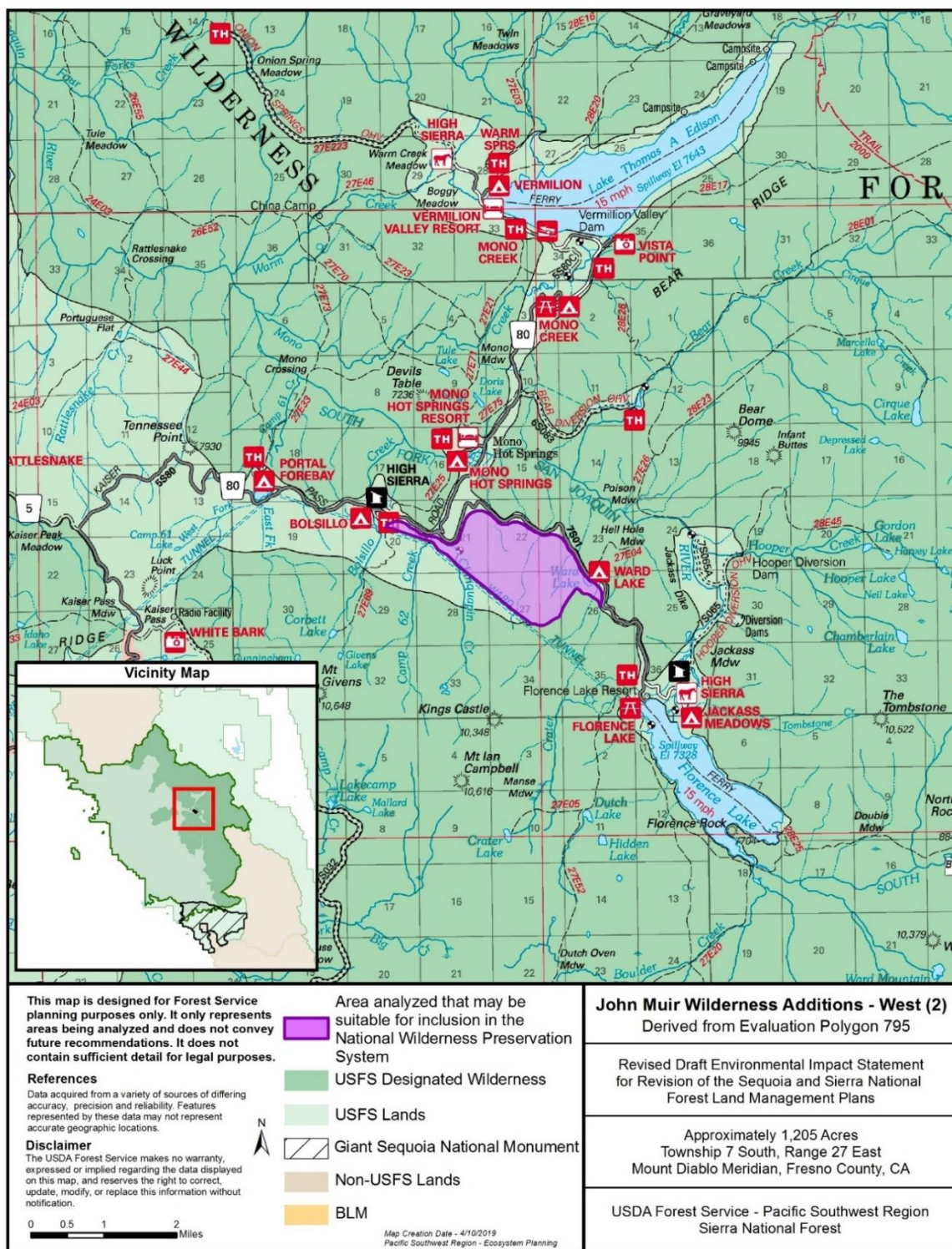
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Vegetation appears natural and is within the natural range of variation.
Solitude or Primitive and Unconfined Recreation	Sounds from roads outside the boundaries are audible and in some places roads are visible, however opportunities for solitude and primitive and unconfined recreation exist.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.

Characteristic	Description
Other Features of Value	Endangered species and habitat (Yosemite toad and Yellow-legged frog). This area is culturally sensitive and is considered a special interest area by Tribes in the area.
Manageability	Approximately 65 percent of the area is inventoried roadless area. Approximately 2 percent of Dinkey Lakes Inventoried Roadless Area is within the area. All adjacent lands are managed by the Forest Service.

Current Uses

Approximately 65 percent of the area is inventoried roadless area. Approximately 2 percent of Dinkey Lakes Inventoried Roadless Area is within the area. This area was historically grazed as part of the Hot Springs Allotment but is not currently active.



Map B-45. John Muir Wilderness Additions – West (2) area analyzed as recommended wilderness in alternative C

Ansel Adams Wilderness Addition

37,062 acres, derived from Evaluation Polygon 819

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Near the southeastern most portion of the Ansel Adams Wilderness and east of National Forest System Road 81 (Minarets Road), including Mammoth Pool Reservoir, and stretching from Kaiser Peak Meadow to Hells Half Acre trailhead to Mammoth Pool Reservoir to Big Creek Fire Station (Map B-46 and Map B-47). The north boundary generally follows the Ansel Adams Wilderness boundary. The remainder of the boundary generally follows Forest Service roads (including Minarets Road, Stump Springs Road), a tunnel and penstock system that connects to Mammoth Pool Powerhouse, a power transmission line, and private land. The boundary is set back from Rattlesnake, Hells Half Acre, and Shake Flat trailheads as well as Daulton Station.

General Geography, Topography, and Vegetation

Steep and rugged terrain with brush and forested slopes with elevations between approximately 2,300 feet and 8,800 feet. Vegetation is composed primarily of Sierra mixed conifer, interspersed with montane hardwood and ponderosa pine.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types.

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

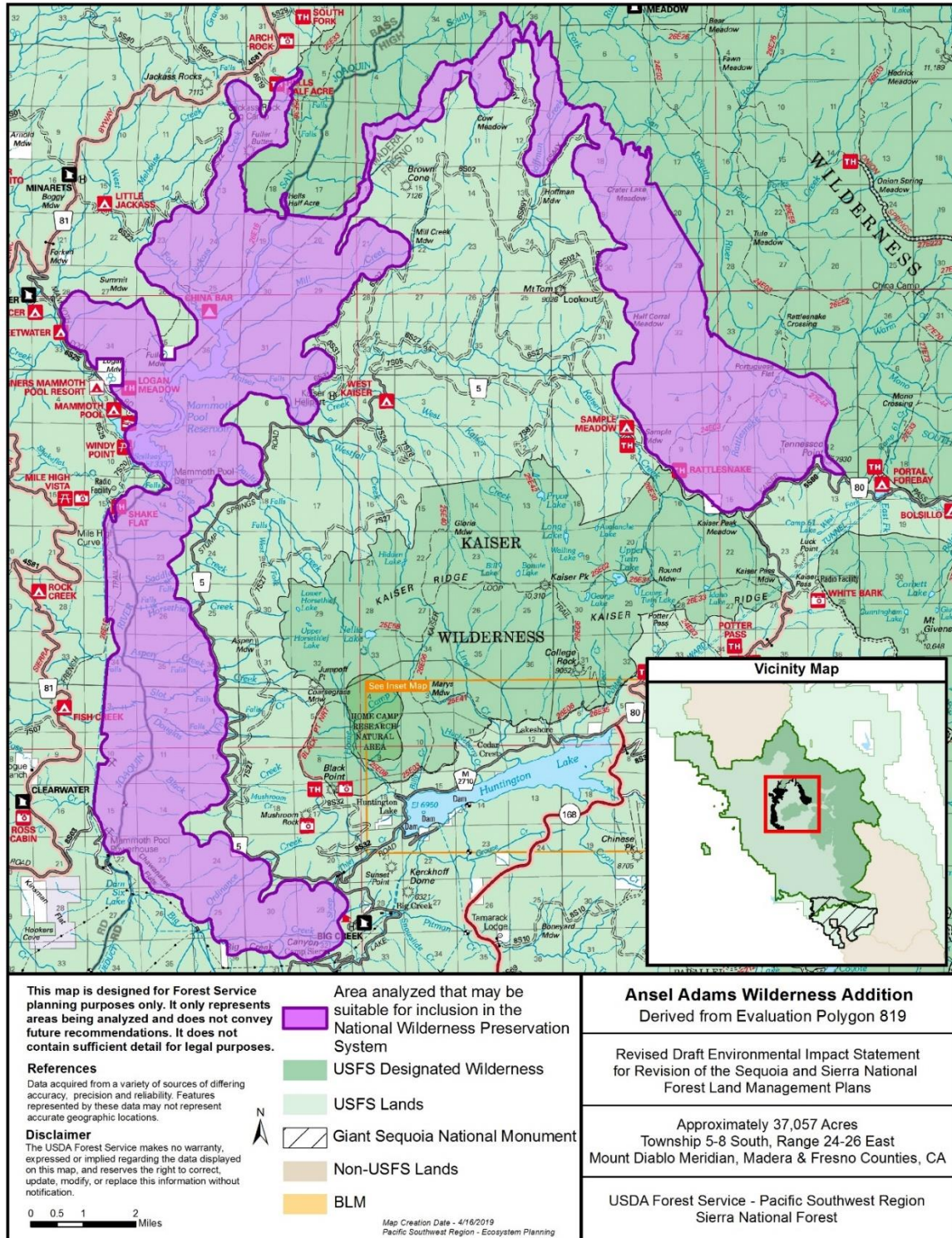
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Includes 1,017 acres of surface water for Mammoth Pool Reservoir. Vegetation in the northern portion is within the natural range of variation. The southern portion was affected by the 2014 French Fire and 2013 Aspen Fire with remnants from suppression actions including both hand and mechanical direct and indirect fire line construction. There are areas with heavy dead and down fuel loads due to fire suppression. Extensive fire suppression impacts are also north of Stump Springs Road. Post fire logging and reforestation has occurred.

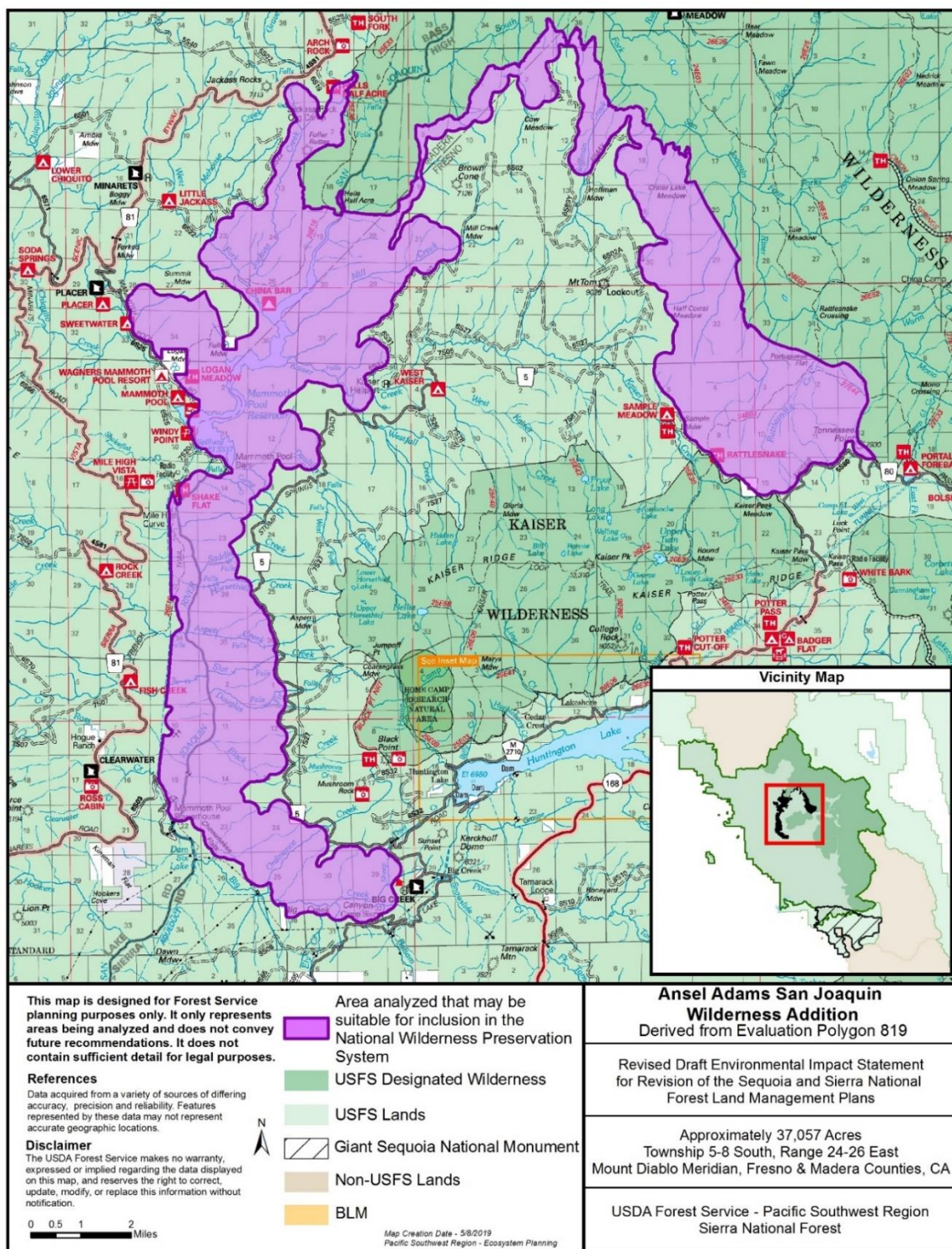
Characteristic	Description
Solitude or Primitive and Unconfined Recreation	Sights and sounds of motorized recreation on and near Mammoth Pool Reservoir and China Bar campground limit opportunities for solitude in those areas. A few non-motorized trails that are infrequently maintained provide opportunities for primitive recreation including hiking, backpacking, horse riding, hunting, and fishing. California Riding and Hiking Trail crosses the southern portion of the area connecting the Kaiser Wilderness and the Ansel Adams Wilderness. Major hydropower infrastructure is visible from a portion of the area in the San Joaquin River Canyon.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	This area is culturally sensitive and is considered a special interest area by Tribes in the area. Cultural and historic sites.
Manageability	Approximately 28 percent of the area is inventoried roadless area. Approximately 46 percent of San Joaquin Inventoried Roadless Area is within the area. Includes 1,017 acres of surface water for Mammoth Pool Reservoir. Adjacent lands are private or managed by the Forest Service.

Current Uses

Grazing occurs within the area. Approximately 28 percent of the area is inventoried roadless area. Approximately 46 percent of San Joaquin Inventoried Roadless Area is within the area. Water improvements and hydropower infrastructure, including 1,017 acres of surface water for Mammoth Pool Reservoir, exist within the area. Downstream from hydropower infrastructure in the San Joaquin River Canyon is a popular noncommercial river rafting area. More than 100 people may raft the river on weekends when water is released. A few non-motorized trails that are infrequently provide opportunities for hiking, backpacking, horse riding, hunting, and fishing. California Riding and Hiking Trail crosses the southern portion of the area connecting the Kaiser Wilderness and the Ansel Adams Wilderness.



Map B-46. Ansel Adams Wilderness Addition area analyzed as recommended wilderness in alternative C



Map B-47. Ansel Adams San Joaquin Wilderness Addition area analyzed as recommended wilderness in alternative E

Ansel Adams Wilderness Mount Raymond Additions (1)

9,117 acres, derived from Evaluation Polygon 821.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Endangered species and habitat (Yosemite toad and Yellow-legged frog).
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Near the southern most portion of Yosemite National Park, the western most portion of the Ansel Adams Wilderness, and includes a portion of the South Fork Merced Wild and Scenic River corridor (Map B-48). The north and west boundaries generally follow the Yosemite National Park boundary, the Ansel Adams Wilderness boundary. The remainder of the boundary generally follows National Forest System roads and routes as well as private land. The boundary is set back from Quartz Mountain trailhead.

General Geography, Topography, and Vegetation

Some steep forested slopes with elevations between approximately 5,900 feet and 9,100 feet. Vegetation is composed primarily of old-growth forests of mixed conifer and fir, with areas of barren rock, patches of montane chaparral, meadows, and several large lakes.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Endangered species and habitat (Yosemite toad and Yellow-legged frog).

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

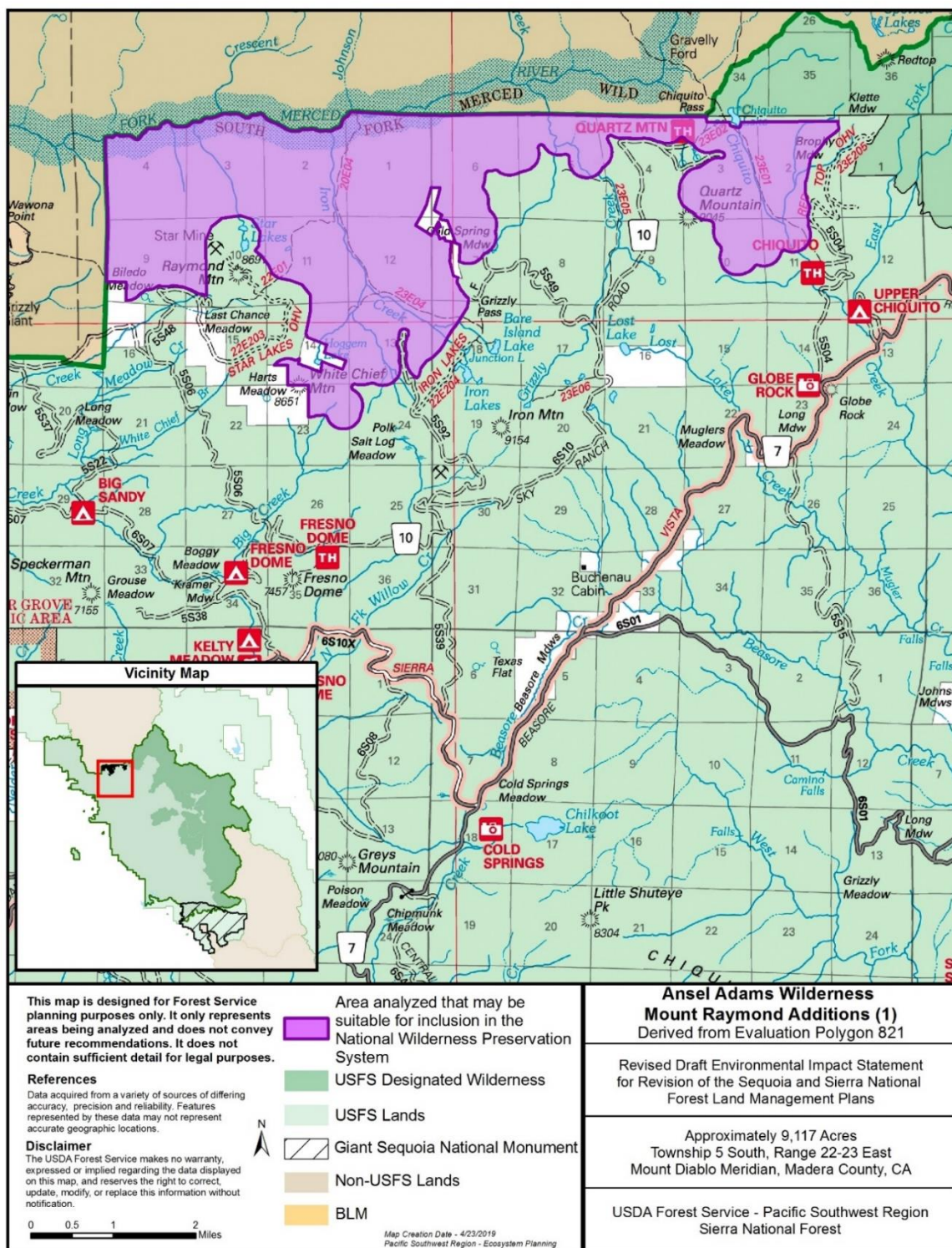
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation appears natural and is within the natural range of variation. No invasive plant species populations are known within the area. California Department of Fish and Wildlife stocks trout in waterways.
Solitude or Primitive and Unconfined Recreation	Sights and sounds of motorized recreation near the boundary may limit opportunities for solitude in those areas. Six trails cross through the area and provide access to Yosemite National Park.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Endangered species and habitat (Yosemite toad and Yellow-legged frog). This area is culturally sensitive and is considered a special interest area by Tribes in the area.

Characteristic	Description
Manageability	Approximately 67 percent of the area is inventoried roadless area. Approximately 75 percent of Mt. Raymond Inventoried Roadless Area and 4 percent of San Joaquin Inventoried Roadless Area are within the area. Potential for fire that will require suppression activities to protect nearby recreation developments and hydroelectric infrastructure. Adjacent lands are private or managed by the Forest Service or the National Park Service.

Current Uses

Approximately 67 percent of the area is inventoried roadless area. Approximately 75 percent of Mt. Raymond Inventoried Roadless Area and 4 percent of San Joaquin Inventoried Roadless Area are within the area. Grazing occurs within the area. California Department of Fish and Wildlife stocks trout in waterways. Six trails cross through the area and provide access to Yosemite National Park. Yosemite Trails Pack Station provides commercial services in Biledo Meadow, which includes supporting structures.



Map B-48. Ansel Adams Wilderness Mount Raymond Additions (1) area analyzed as recommended wilderness in alternative C

Ansel Adams Wilderness Mount Raymond Additions (2)

661 acres, derived from Evaluation Polygon 821.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Endangered species and habitat (Yosemite toad and Yellow-legged frog).
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Near the southern most portion of Yosemite National Park, the western most portion of the Ansel Adams Wilderness, and just north of Upper Chiquito campground (Map B-49). The north boundary follows the Ansel Adams Wilderness boundary. The remainder of the boundary generally follows Red Top off-highway vehicle route and National Forest System roads (including 5S70, 5S04, 5S11, and 5S07B).

General Geography, Topography, and Vegetation

Rocky forested slopes with elevations between approximately 7,000 feet to 8,700 feet. Vegetation is composed primarily of Sierra mixed conifer and red fir, with patches of montane chaparral.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Endangered species and habitat (Yosemite toad and Yellow-legged frog).

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

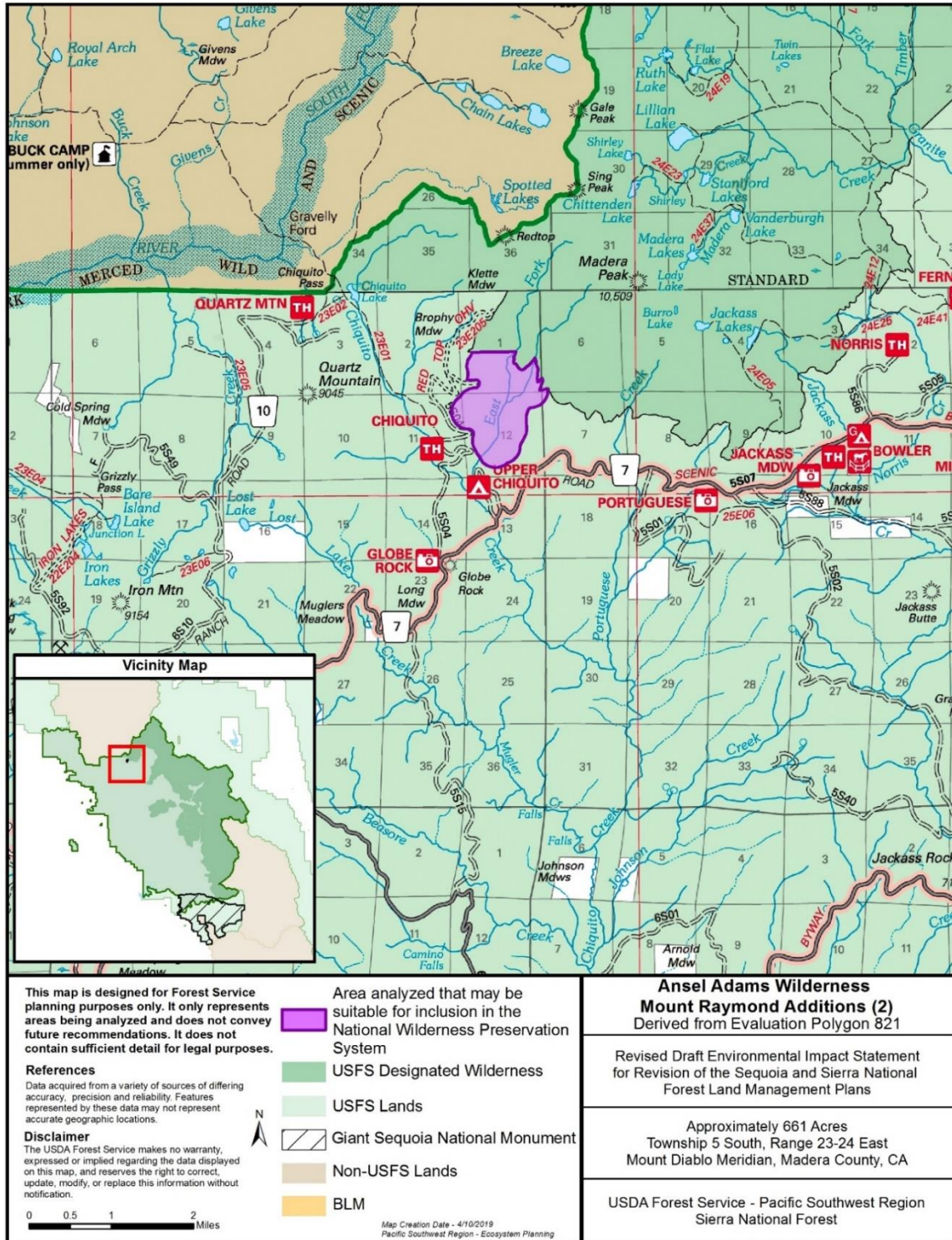
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation appears natural and is within the natural range of variation. No invasive plant species populations are known within the area. Evidence of logging is noticeable near Beasore Road.
Solitude or Primitive and Unconfined Recreation	Sights and sounds of motorized recreation near the boundary may limit opportunities for solitude in those areas.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Endangered species and habitat (Yosemite toad and Yellow-legged frog). This area is culturally sensitive and is considered a special interest area by Tribes in the area.

Characteristic	Description
Manageability	Approximately 28 percent of the area is inventoried roadless area. Approximately 1 percent of San Joaquin Inventoried Roadless Area is within the area. Potential for fire that will require suppression activities to protect nearby recreation developments and hydroelectric infrastructure. All adjacent lands are managed by the Forest Service.

Current Uses

Approximately 28 percent of the area is inventoried roadless area. Approximately 1 percent of San Joaquin Inventoried Roadless Area is within the area. Grazing occurs within the area. The entire area is within an active grazing allotment.



Map B-49. Ansel Adams Wilderness Mount Raymond Additions (2) area analyzed as recommended wilderness in alternative C

Ansel Adams Wilderness Granite Creek Additions (1)

6,964 acres, derived from Evaluation Polygon 822

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Endangered species and habitat (Yosemite toad and Yellow-legged frog).
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Near the south eastern most portion of Yosemite National Park, south of western most portion of the Ansel Adams Wilderness, west of Clover Meadow, and north of National Forest System Road 7 (Beasore Road/Sierra Vista Scenic Byway) (Map B-50). The north boundary follows the Ansel Adams Wilderness boundary. The remainder of the boundary generally follows Beasore Road/Sierra Vista Scenic Byway, National Forest System roads (including 5S86, 505, 4S02, 4S43, 5S30, 4S25, and 4S09), and private land. The boundary is set back from Norris and Fernandez trailheads.

General Geography, Topography, and Vegetation

Forested slopes with elevations between approximately 7,000 feet and 9,200 feet. There are several large lakes and meadows and rich Vegetation is composed primarily of old-growth forests of red fir, with patches of montane chaparral, meadows, and several large lakes.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Endangered species and habitat (Yosemite toad and Yellow-legged frog).

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

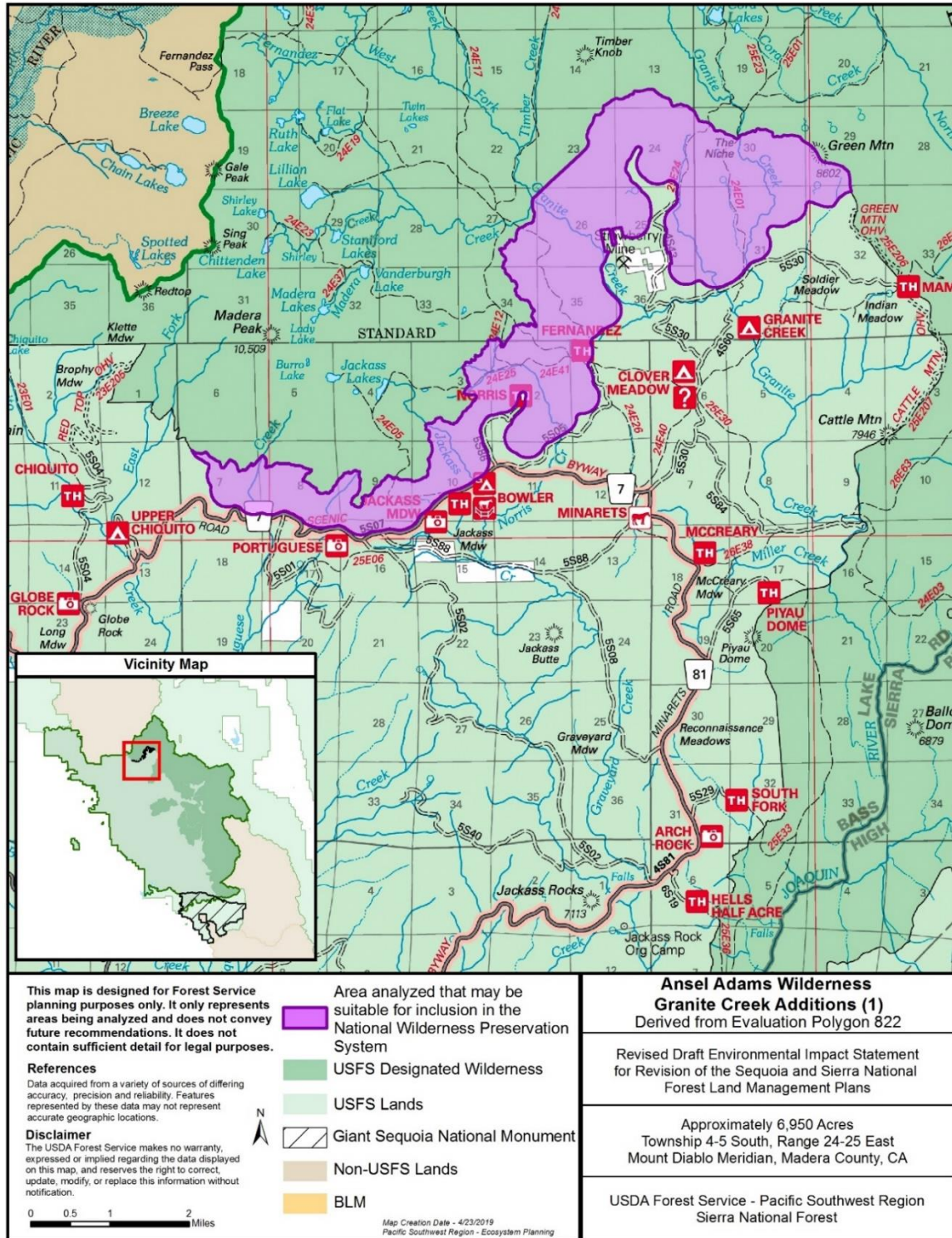
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation appears natural and is within the natural range of variation. No invasive plant species populations are known within the area. California Department of Fish and Wildlife stocks trout in waterways.
Solitude or Primitive and Unconfined Recreation	Sights and sounds of motorized recreation near the boundary may limit opportunities for solitude in those areas. Opportunities for primitive and unconfined recreation exist, including hiking, horse riding, camping, hunting, and fishing. Three campgrounds, four trailheads, two vista points along Beasore Road/Sierra Vista Scenic Byway, and a corral exist near the boundary. Most of these developments support access to the Ansel Adams Wilderness and Yosemite National Park.

Characteristic	Description
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	Endangered species and habitat (Yosemite toad and Yellow-legged frog). This area is culturally sensitive and is considered a special interest area by Tribes in the area.
Manageability	Approximately 74 percent of the area is inventoried roadless area. Approximately 23 percent of San Joaquin Inventoried Roadless Area is within the area. Potential for fire that will require suppression activities to protect nearby recreation developments, private property and the community of Wawona. Adjacent lands are private or managed by the Forest Service.

Current Uses

Approximately 74 percent of the area is inventoried roadless area. Approximately 23 percent of San Joaquin Inventoried Roadless Area is within the area. Grazing occurs within the area. California Department of Fish and Wildlife stocks trout in waterways. Hiking, horse riding, camping, hunting, fishing, and general sightseeing.



Map B-50. Ansel Adams Wilderness Granite Creek Additions (1) area analyzed as recommended wilderness in alternative C

Ansel Adams Wilderness Granite Creek Additions (2)

2,949 acres, derived from Evaluation Polygon 822.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Endangered species and habitat (Yosemite toad and Yellow-legged frog).
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Near the south eastern most portion of Yosemite National Park and just east of Clover Meadow (Map B-51). A portion of the southeast boundary follows the Ansel Adams Wilderness boundary. The remainder of the boundary generally follows National Forest System roads (including 5S84, 5S30, 5S33, 4S61, and 5S67) and Cattle Mountain off-highway vehicles route. The boundary is set back from Granite Creek campgrounds.

General Geography, Topography, and Vegetation

Steep, rocky, forested slopes with elevations between approximately 6,400 feet and 7,500 feet. Vegetation is composed primarily of Sierra mixed conifer, lodgepole pine, and red fir.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Endangered species and habitat (Yosemite toad and Yellow-legged frog).

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

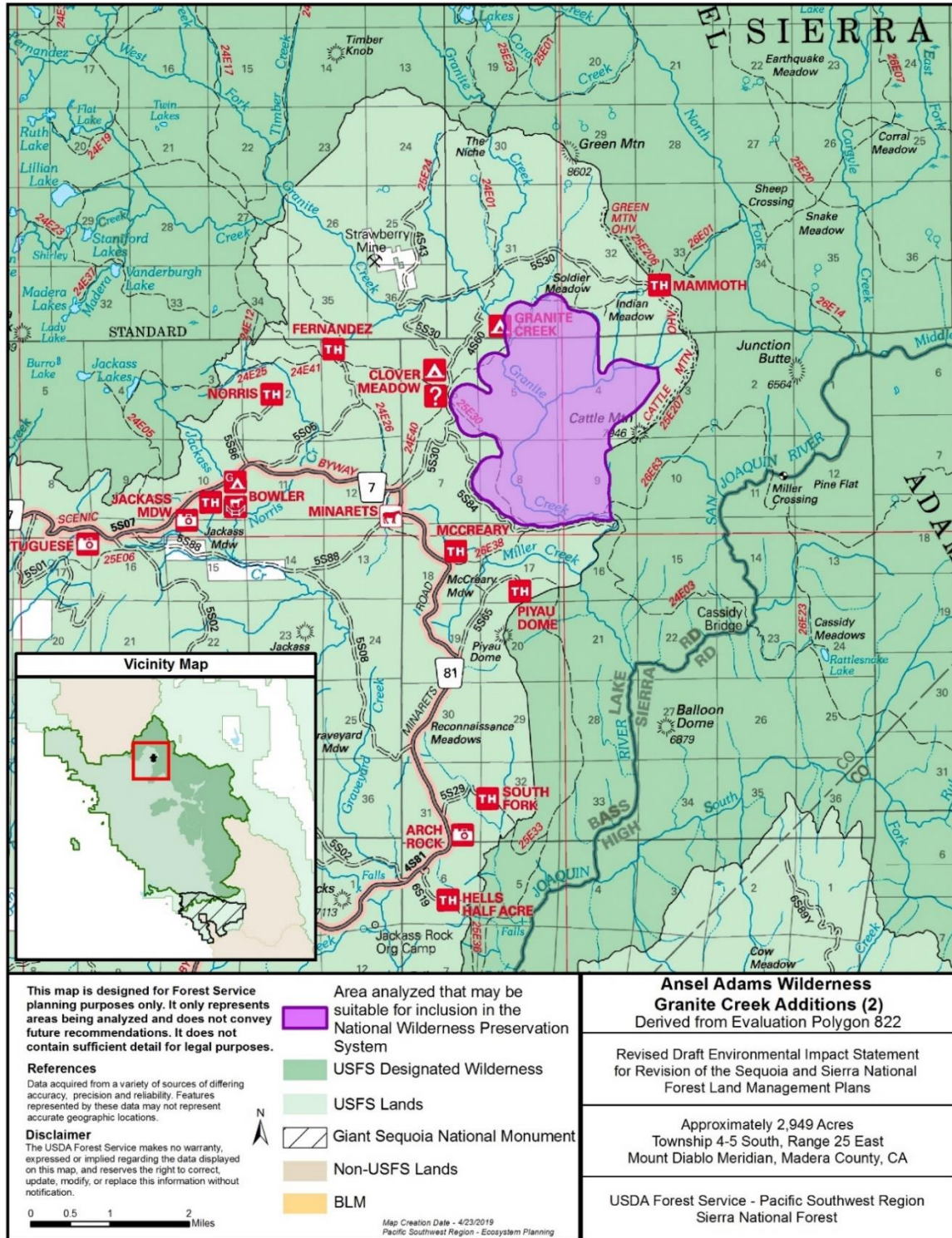
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Vegetation appears natural and is within the natural range of variation. No invasive plant species populations are known within the area. California Department of Fish and Wildlife stocks trout in waterways.
Solitude or Primitive and Unconfined Recreation	Sights and sounds of motorized recreation near the boundary may limit opportunities for solitude in those areas. Two campgrounds and three trailheads exist near the boundary. Most of these developments support access to the Ansel Adams Wilderness.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	Endangered species and habitat (Yosemite toad and Yellow-legged frog). This area is culturally sensitive and is considered a special interest area by Tribes in the area.

Characteristic	Description
Manageability	Approximately 84 percent of the area is inventoried roadless area. Approximately 11 percent of San Joaquin Inventoried Roadless Area is within the area. Potential for fire that will require suppression activities to protect nearby recreation developments, private property and the community of Wawona. All adjacent lands are managed by the Forest Service.

Current Uses

Approximately 84 percent of the area is inventoried roadless area. Approximately 11 percent of San Joaquin Inventoried Roadless Area is within the area. Grazing occurs within the area. California Department of Fish and Wildlife stocks trout in waterways. Hiking, horse riding, camping, hunting, fishing, and general sightseeing.



Map B-51. Ansel Adams Wilderness Granite Creek Additions (2) area analyzed as recommended wilderness in alternative C

John Muir Wilderness Additions – Southwest

3,359 acres, derived from Evaluation Polygon 1378.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Near the south end of Wishon Reservoir and just north of the Kings River Special Management Area (Map B-52 and Map B-53). The east boundary follows the John Muir Wilderness boundary and private land. The remainder of the boundary follows National Forest System roads (including 11S31, 11S40, and 11S07) and Spanish Lake off-highway vehicles route.

General Geography, Topography, and Vegetation

Steep and rugged terrain with brush and forested slopes with elevations between approximately 6,700 feet and 9,400 feet. Vegetation is composed primarily of chaparral at lower elevations, oak-conifer at middle elevations, and mixed conifers and red fir at higher elevations.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological:

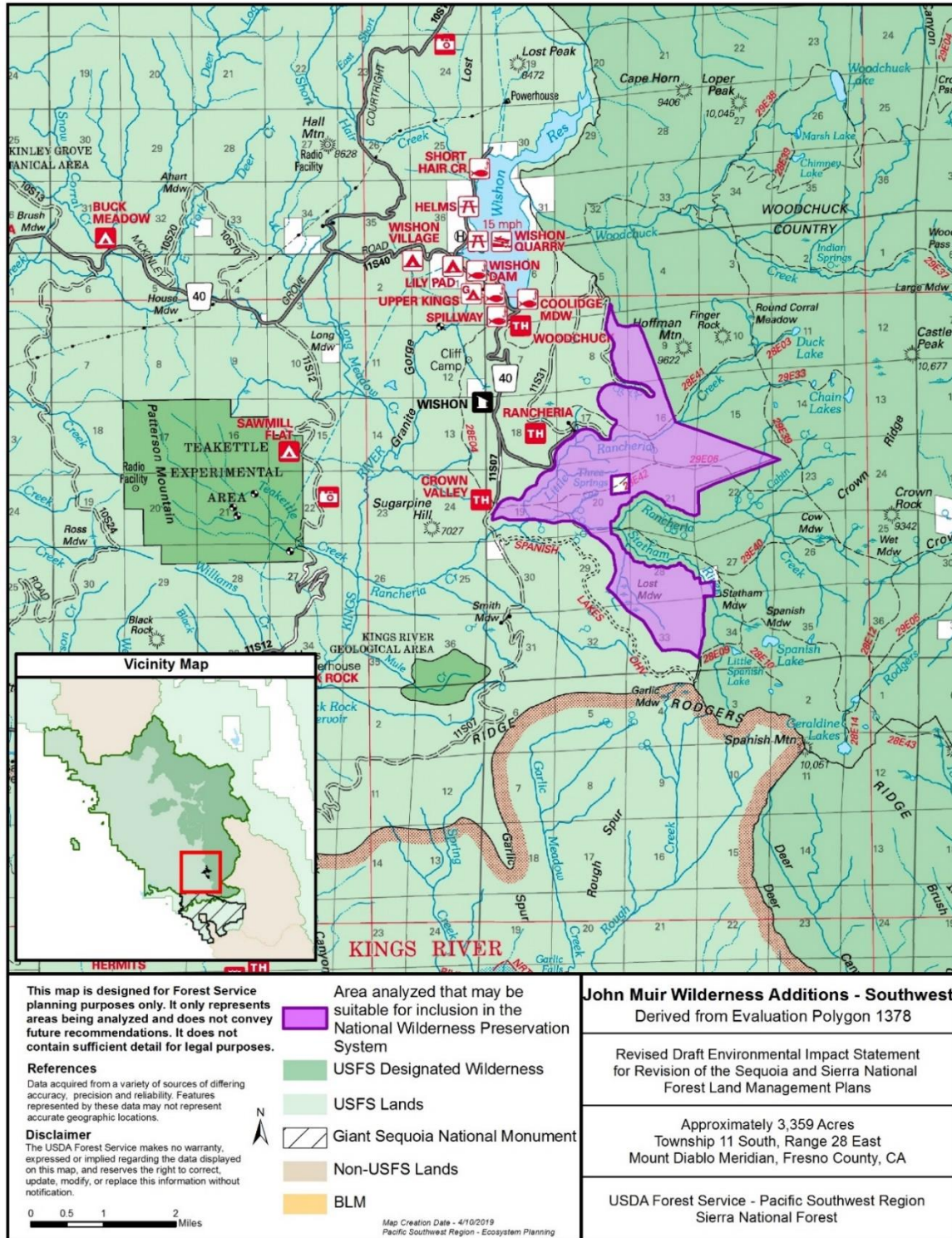
Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

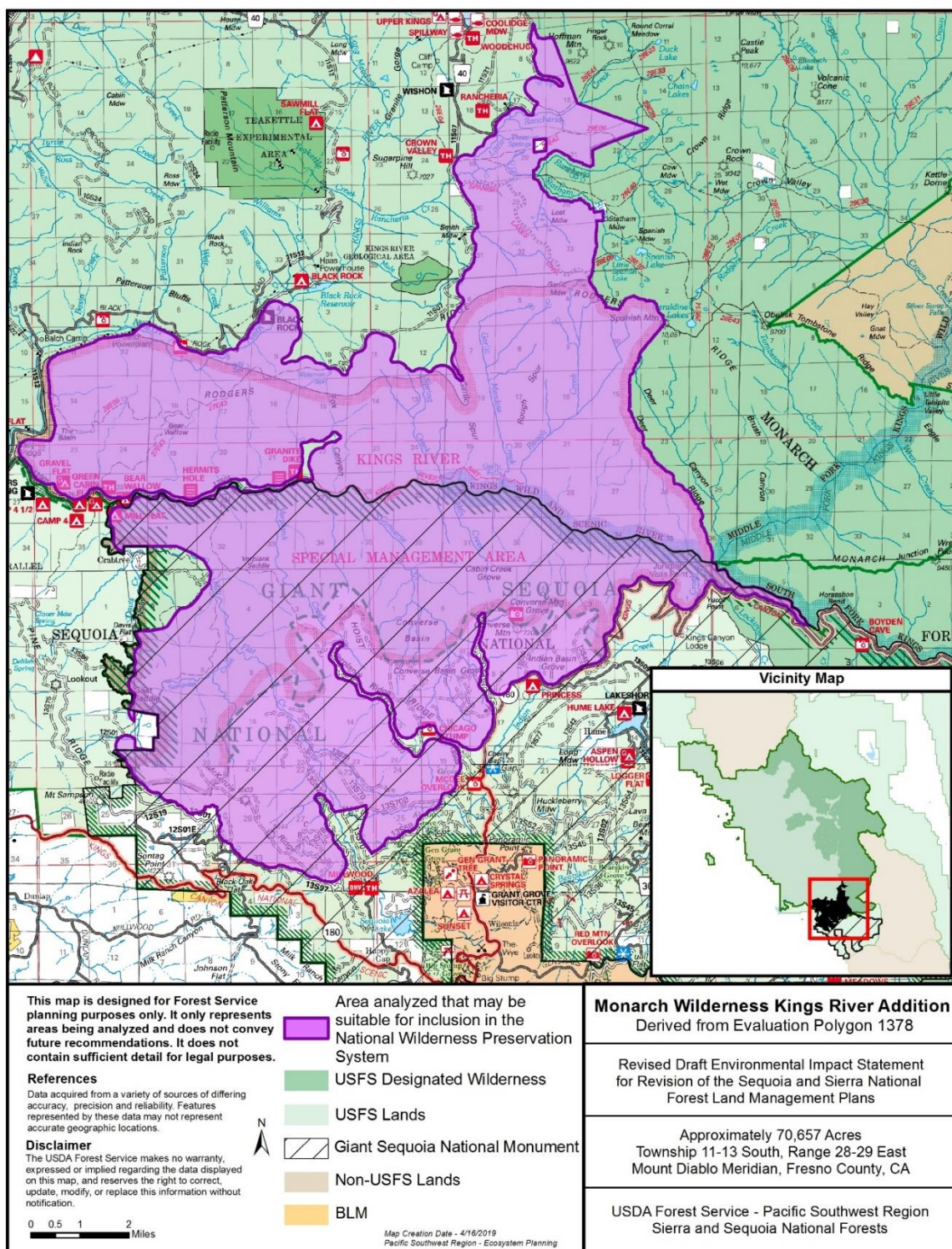
Characteristic	Description
Naturalness	Grazing occurs. Vegetation appears natural and is within the natural range of variation. Non-native understory plants, such as European annual grasses and forbs exist, especially in open areas. A large amount of this area was affected by the 2015 Rough Fire with remnants from suppression actions including both hand and mechanical direct and indirect fire line construction.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist. Most of the area is rarely visited and existing trails are overgrown with brush.
If Less Than 5,000 Acres, Preservation Practicability	Contiguous addition to designated wilderness.
Other Features of Value	This area is culturally sensitive and is considered a special interest area by Tribes in the area.
Manageability	Approximately 73 percent of the area is inventoried roadless area. Approximately 5 percent of Kings River Inventoried Roadless Area is within the area. Potential for large fires that are likely to be aggressively suppressed. One private inholding. Adjacent lands are private or managed by the Forest Service.

Current Uses

Approximately 73 percent of the area is inventoried roadless area. Approximately 5 percent of Kings River Inventoried Roadless Area is within the area. Grazing occurs within the area. Most of the area is rarely visited and existing trails are overgrown with brush.



Map B-52. John Muir Wilderness Additions – Southwest area analyzed as recommended wilderness in alternative C



Map B-53. Monarch Wilderness Kings River Addition area analyzed as recommended wilderness in alternative E

Monarch Wilderness Addition – West

42,512 acres, derived from Evaluation Polygon 1378.

Summary of Factors Considered in Carrying this Area Forward for Analysis

- Interest in recommending this area from several members of the public throughout the wilderness inventory and evaluation process.
- Intact condition of the ecosystem types.
- Opportunities for solitude and primitive and unconfined recreation.
- Contiguous with existing designated wilderness.

Location and Description of Recommended Boundary

Near the south western most portion of the John Muir Wilderness, west of the Monarch Wilderness, and includes a portion of the Kings Wild and Scenic River and most of the Kings River Special Management Area (Map B-54 and Map B-53). The east boundary generally follows the Monarch Wilderness boundary. The remainder of the boundary generally follows National Forest System roads and routes, the Kings River Special Management Area boundary, and private land.

General Geography, Topography, and Vegetation

Steep and rugged terrain with brush and forested slopes, with elevations between approximately 1,000 feet (Kings River, near Rodgers Crossing) and 10,062 feet (Spanish Mountain). Vegetation is composed primarily of chaparral at lower elevations, oak-conifer at middle elevations, and mixed conifers and Giant Sequoia groves at middle to higher elevations.

Ecological and Social Characteristics that Provide the Basis for National Wilderness Preservation System Inclusion Suitability

Ecological: Intact condition of the ecosystem types. Giant Sequoia groves

Social: Public interest. Contiguous with designated wilderness. Opportunities for solitude and primitive and unconfined recreation.

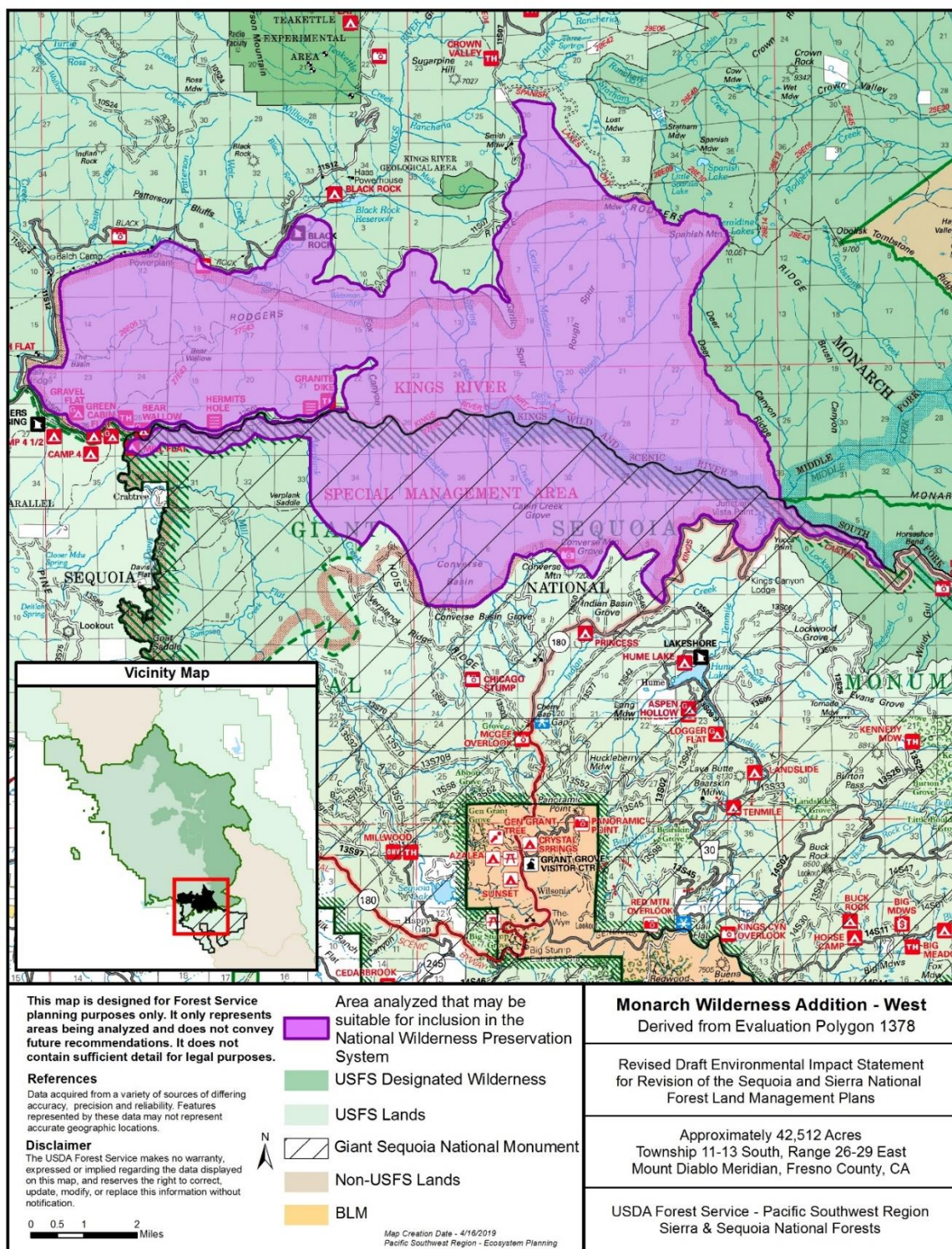
Wilderness Characteristics and the Ability to Protect and Manage the Area so as to Preserve Wilderness Characteristics

Characteristic	Description
Naturalness	Grazing occurs. Vegetation appears natural.
Solitude or Primitive and Unconfined Recreation	Opportunities for solitude and primitive and unconfined recreation exist.
If Less Than 5,000 Acres, Preservation Practicability	Not applicable.
Other Features of Value	This area is culturally sensitive and is considered a special interest area by Tribes in the area. Cultural and historic sites. Giant Sequoia groves.

Characteristic	Description
Manageability	Approximately 88 percent of the area is inventoried roadless area. Approximately 70 percent of Kings River Inventoried Roadless Area is within the area. Portion of Kings Wild and Scenic River is within the area. Includes almost all of the Kings River Special Management Area. Partly within Giant Sequoia National Monument. Potential for large fires that are likely to be aggressively suppressed to protect nearby hydroelectric infrastructure on the North Fork Kings River. Adjacent lands are private or managed by the Forest Service.

Current Uses

Approximately 88 percent of the area is inventoried roadless area. Approximately 70 percent of Kings River Inventoried Roadless Area is within the area. Portion of Kings Wild and Scenic River is within the area. Includes almost all of the Kings River Special Management area. The southern area, south of the Kings River, is within Giant Sequoia National Monument. Grazing occurs in the Garlic Meadow area. Approximately 14 miles of non-motorized trails are lightly used by hikers, hunters, and anglers.



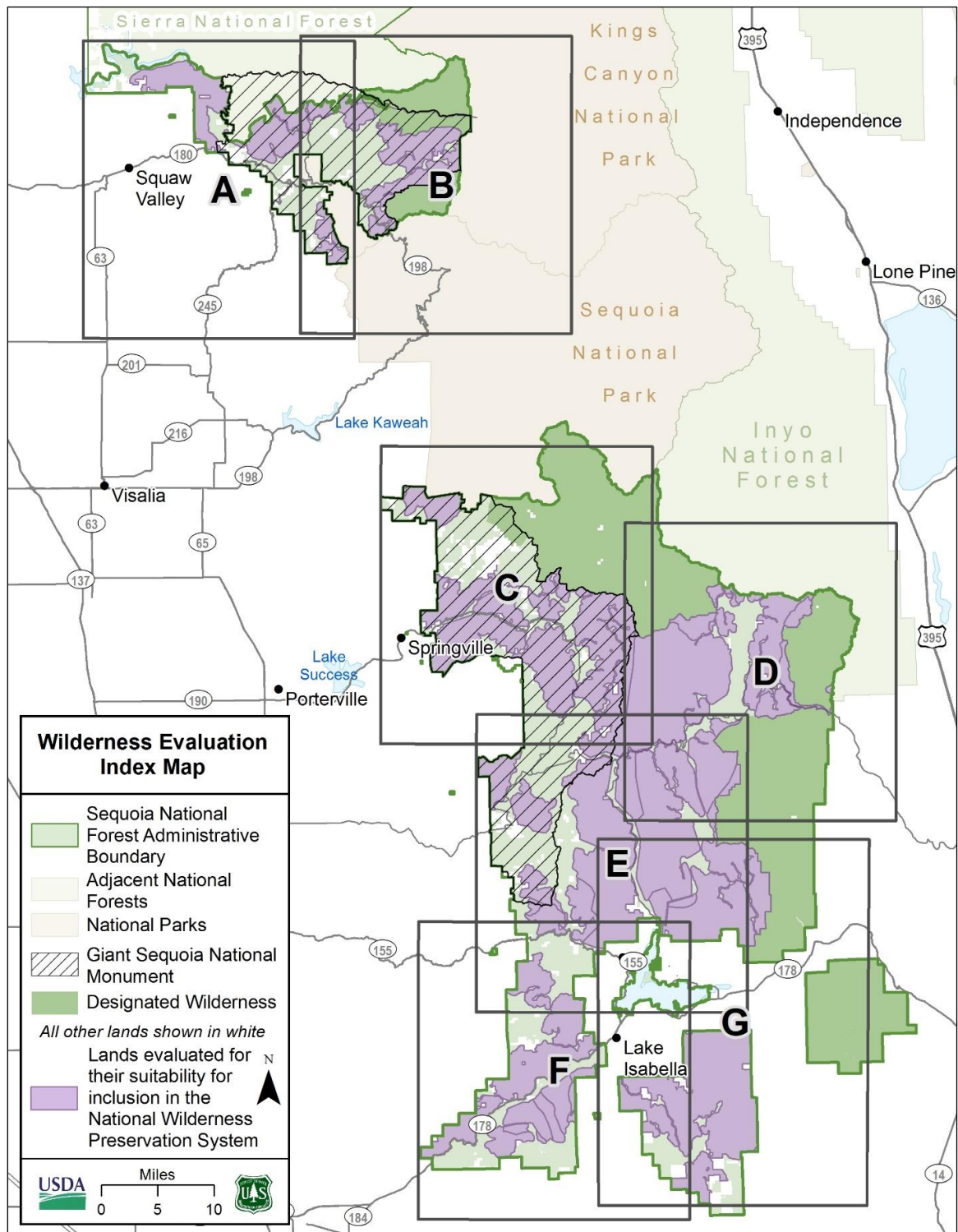
Map B-54. Monarch Wilderness Addition – West area analyzed as recommended wilderness in alternative C

Evaluation of Wilderness Characteristics

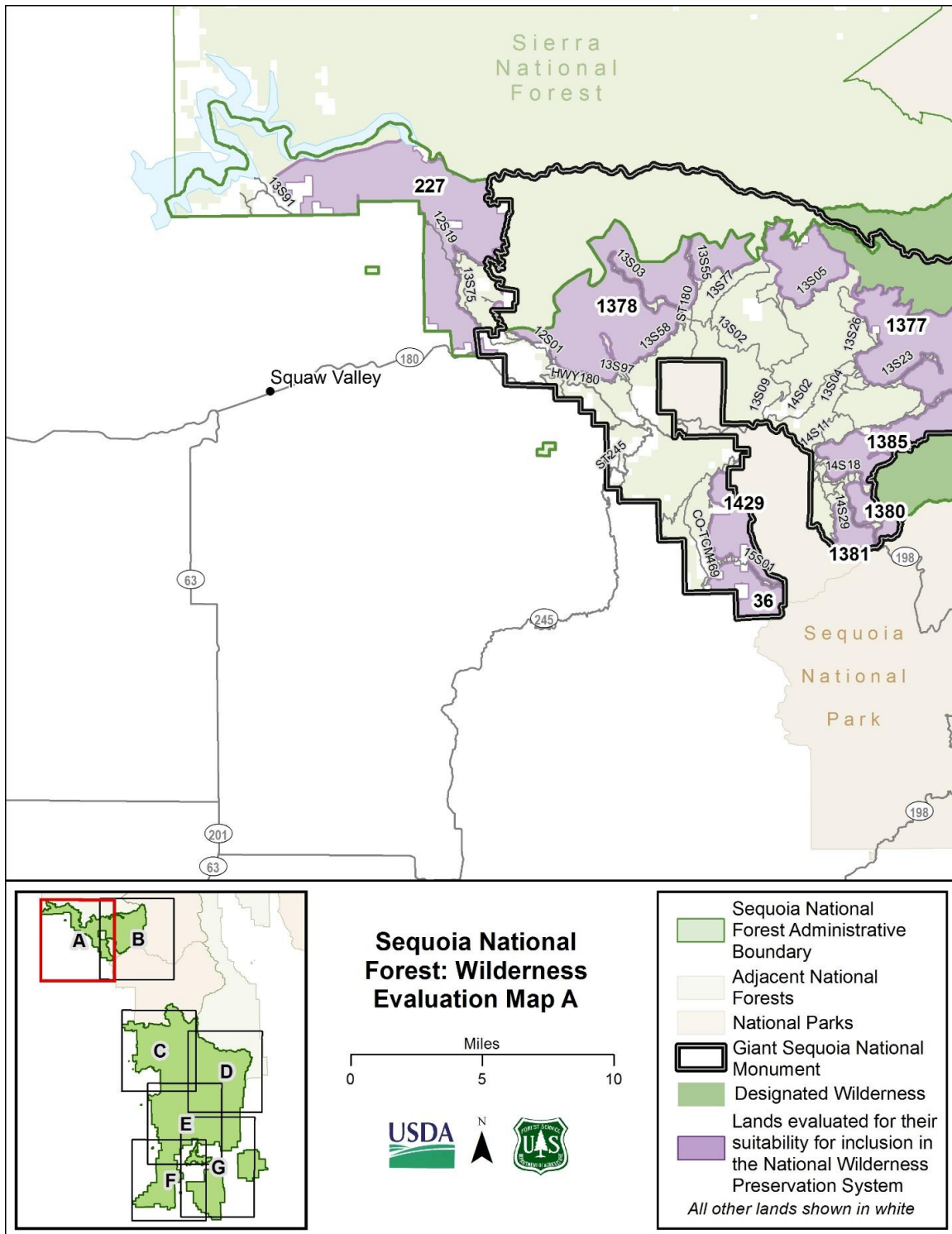
This section evaluates the wilderness characteristics of all areas in the final inventory of lands that may be suitable for inclusion in the National Wilderness Preservation System. For each forest, a series of maps are provided first, followed by evaluation narratives for each forest. The map section includes an index map. The relevant sectional maps are referenced in each polygon narrative.

Sequoia National Forest

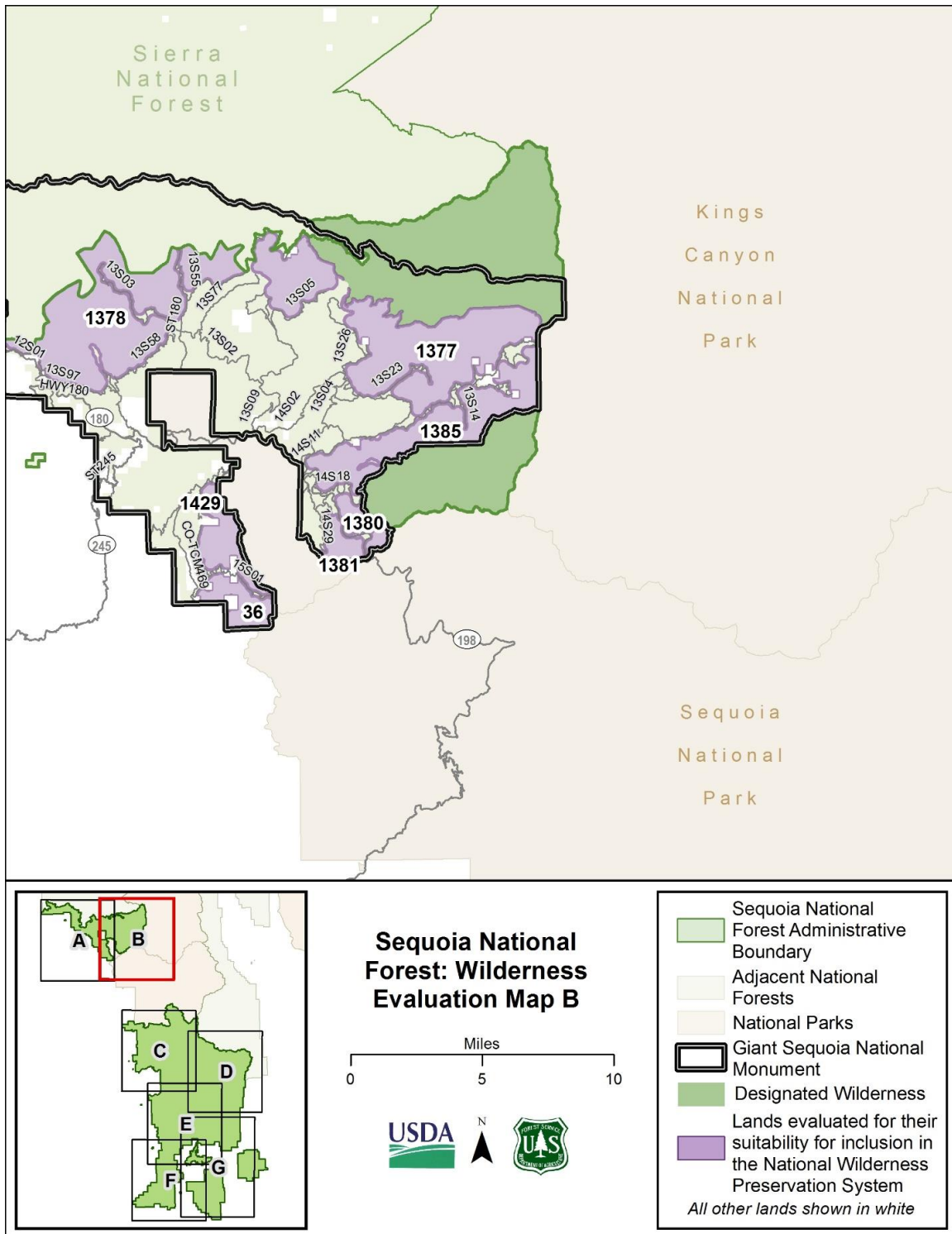
Evaluation Maps



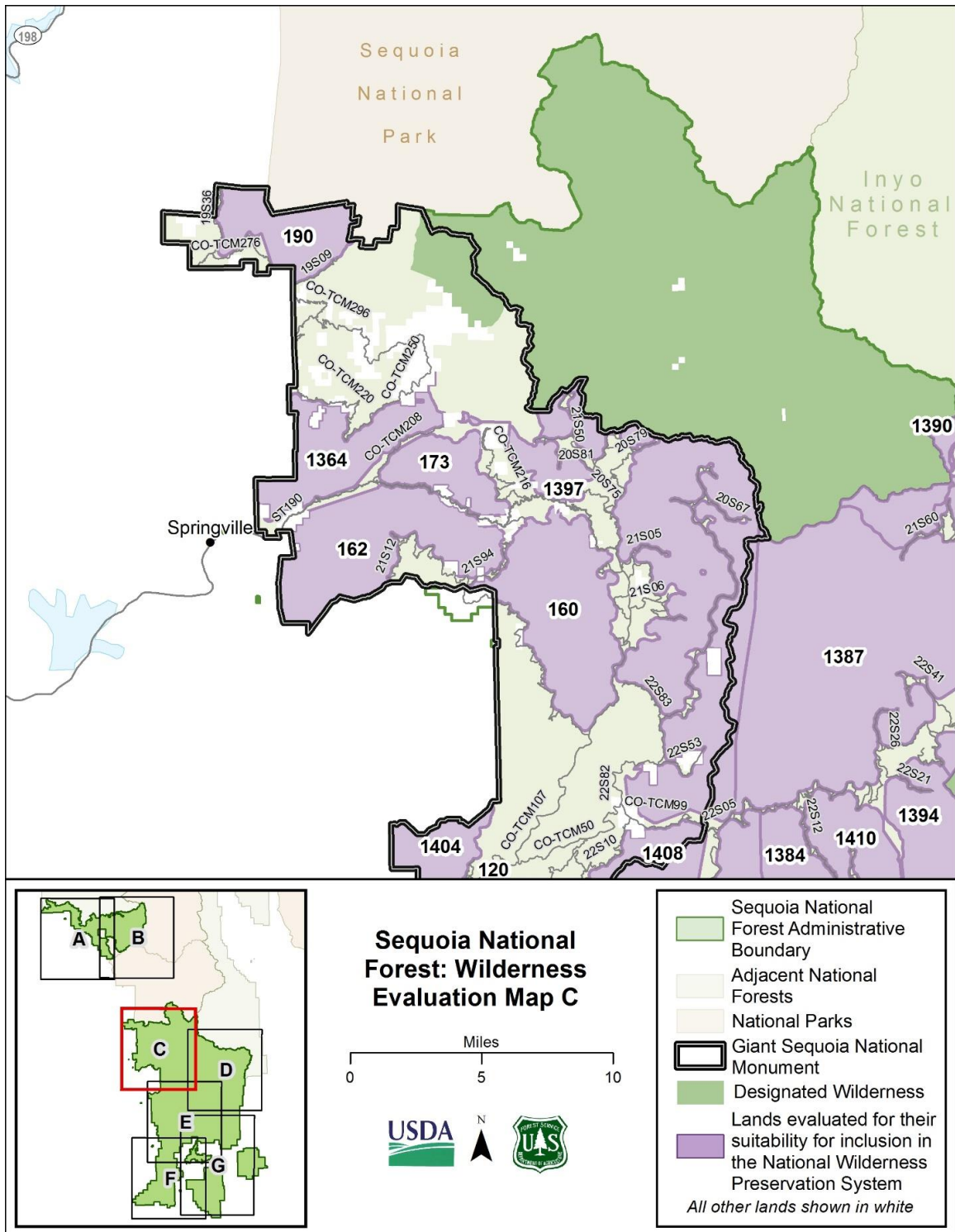
Map B-55. Map index for Sequoia National Forest lands evaluated for their suitability to be recommended for wilderness designation



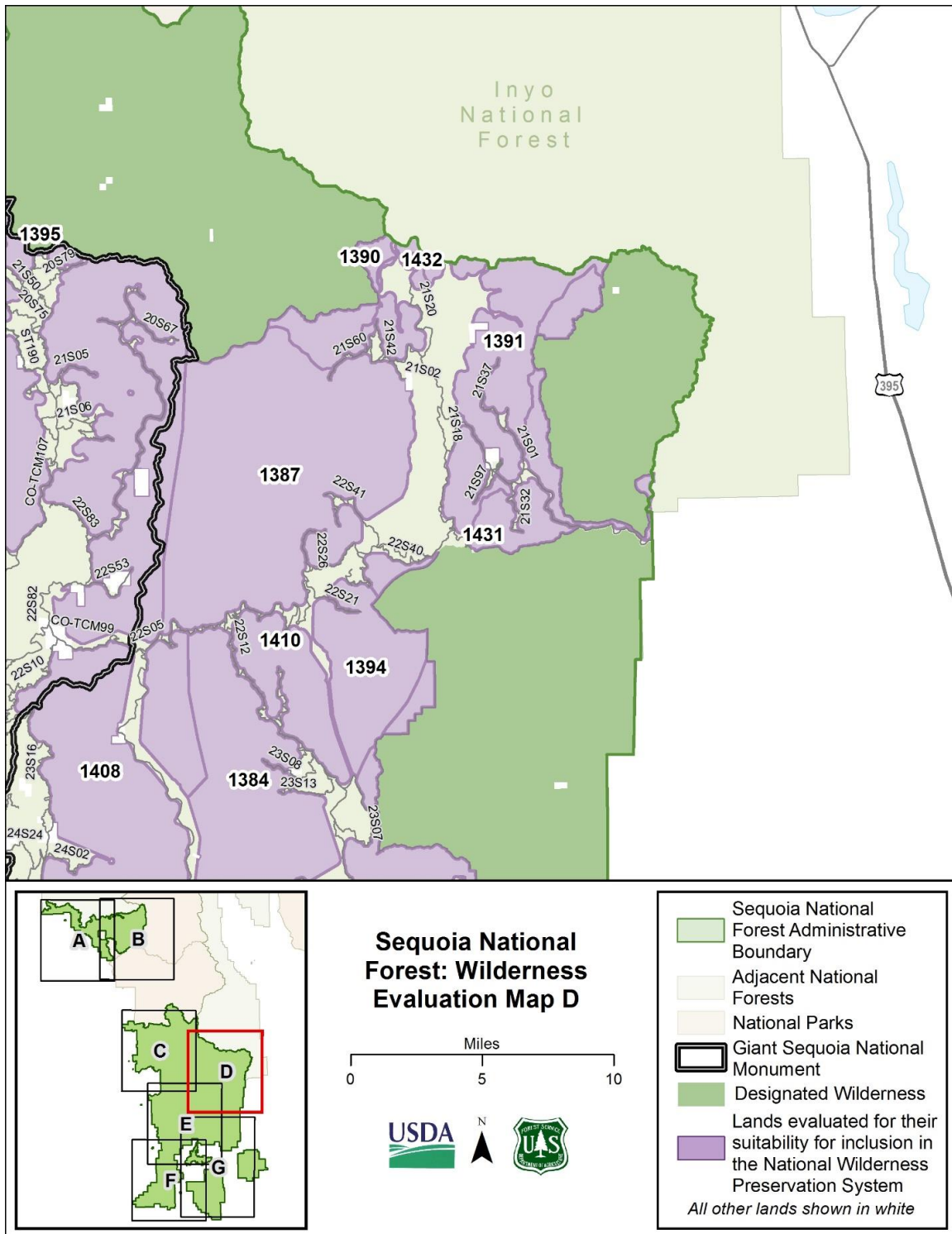
Map B-56. Sequoia National Forest evaluation map A



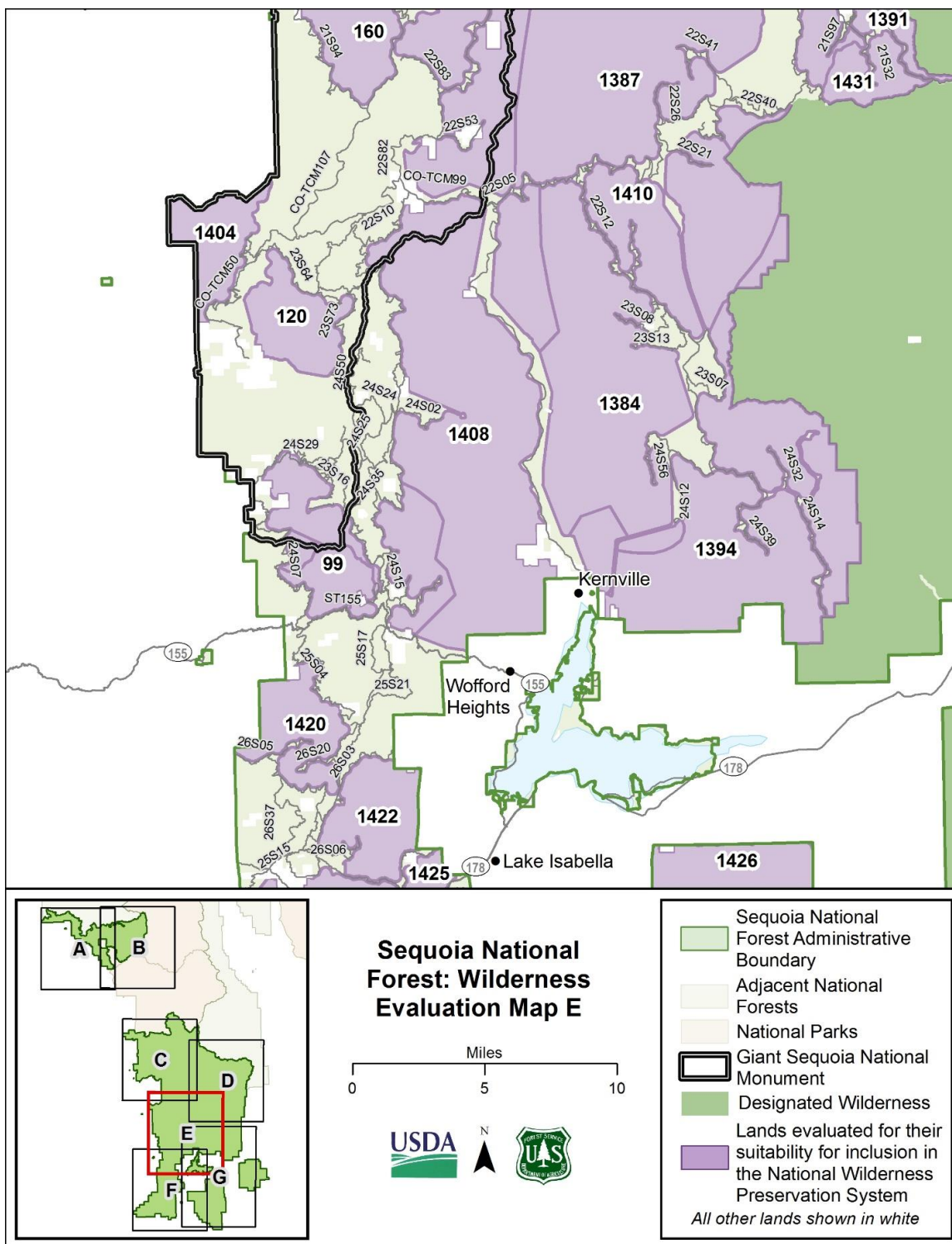
Map B-57. Sequoia National Forest evaluation map B



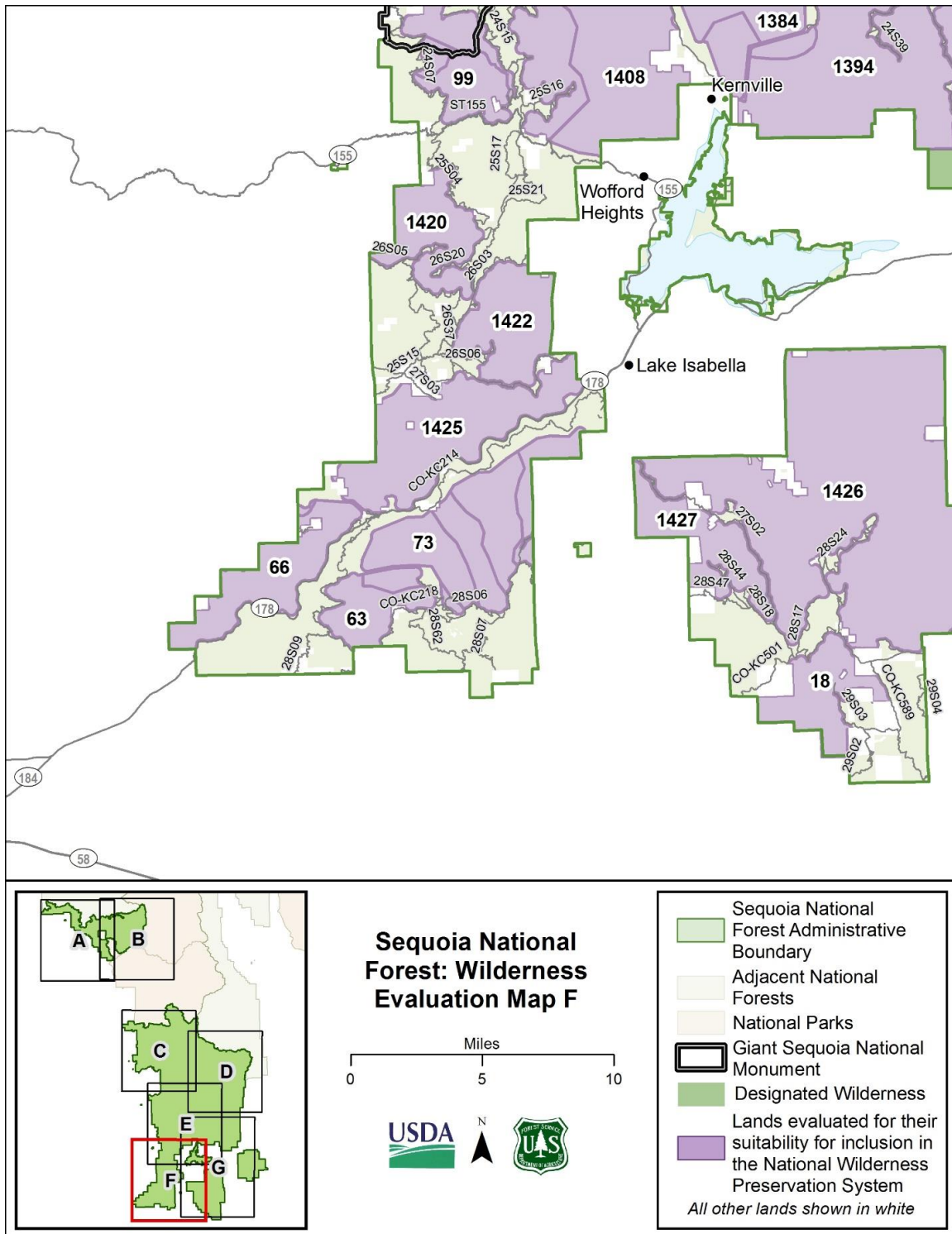
Map B-58. Sequoia National Forest evaluation map C



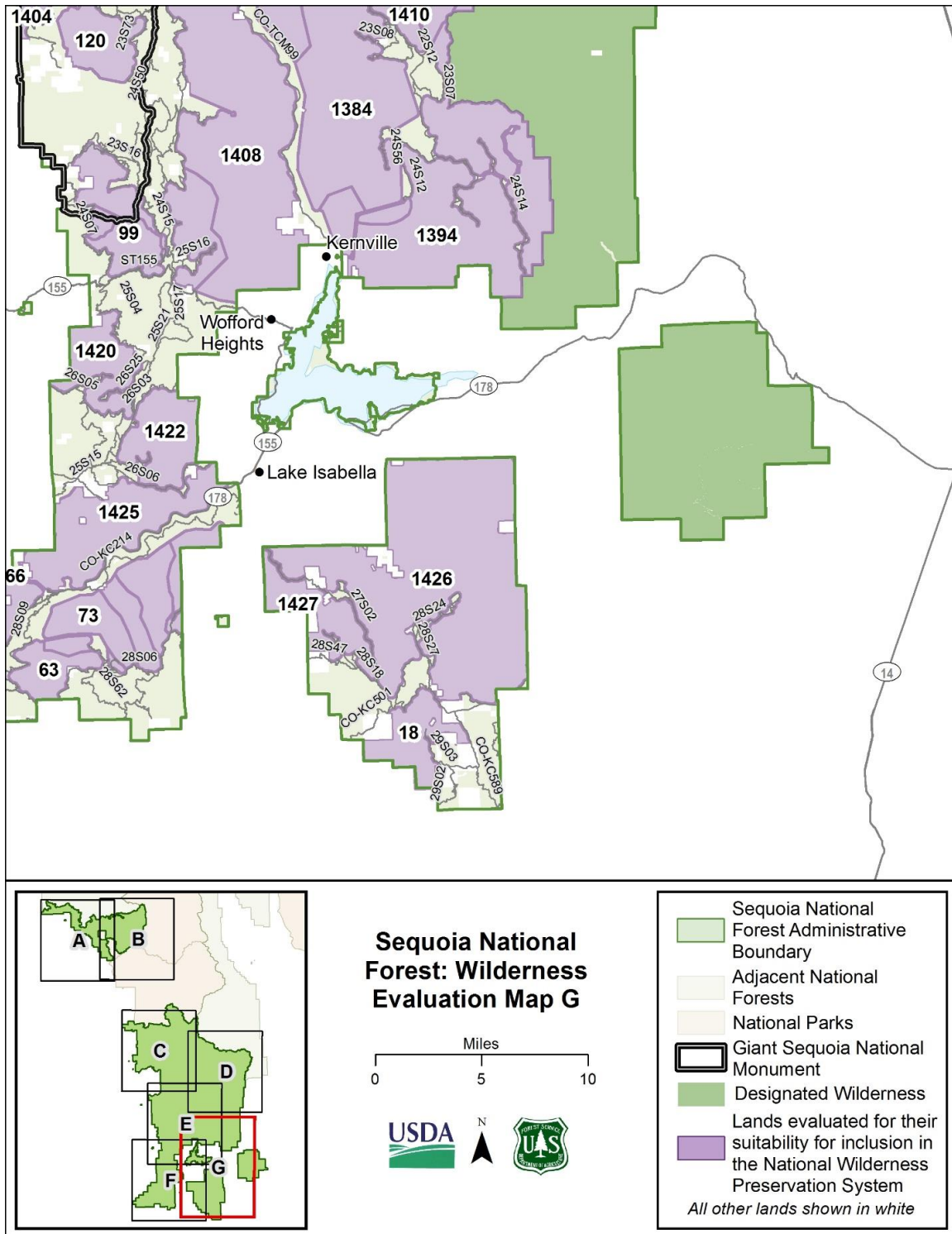
Map B-59. Sequoia National Forest evaluation map D



Map B-60. Sequoia National Forest evaluation map E



Map B-61. Sequoia National Forest evaluation map F



Map B-62. Sequoia National Forest evaluation map G

Polygon 18 (Southern Paiute Mountains)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails and an authorized motorized access to private land within the boundary of the polygon, and an extensive network of authorized forest system roads bordering the polygon. Sights and sounds from trails and roads would likely affect large portions the polygon. The appearance of naturalness is substantially affected by historic mining activities and developments. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,256 acres.

General Description

Polygon 18 is a mid-elevation, mountainous canyon area along the south side of the Piute Mountains (Map B-62, Sequoia National Forest evaluation map G). It ranges in elevation from 5,000 feet to 7,500 feet. The area is 6,337 acres of land and is irregularly shaped. It is not contiguous with any other roadless or wilderness areas. It is bordered by private land on the east, south, and part of the west sides and by National Forest System land on the north and part of the west.

National Vegetation Classification System data indicates 2 percent of the area of the polygon (128 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains five ecological groups with a total area of 2,256 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California Mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Vegetation is dominated by chaparral, foothill oak-pine woodland, ponderosa pine and sage brush on upper slopes. Forest system motorcycle trail 34E48 diagonally bisects polygon 18.

Unauthorized motorized use is prolific northeast of the system trail. The area was heavily occupied during the Gold Rush and there are multiple historical mining sites within the polygon. All of the recorded mining sites are located on the north-facing portion of the unit near Claraville and evidence includes two standing log cabins, Onion Patch Cabin and Gerry Atkin's Cabin; numerous foundations left from when the area was popular in the 1930s when cabins associated with mining claims were built; and many adits, mine shafts, two mill sites and numerous mining ditches. There is also a ground-sluicing area, greater than 10 acres in size, where an industrial placer mining technique significantly altered the landscape. There may be additional mining near the southern edge of the unit. The Gwenn Mine, one of the largest producers of gold and tungsten in the Piutes, is less than a mile from the boundary of the polygon. A Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) repository is approximately half mile outside the boundary. Historical records suggest the southern escarpment of the Piutes saw a great deal of mining and prospection between 1900 and 1940.

The area is part of the Loco Bill allotment and Piute Grazing allotment and is visited by cattle permittees in the course of managing their livestock and livestock infrastructure. Improvements within the area include grazing-related infrastructure (fences) and several.

Opportunities for Solitude or Primitive and Unconfined Recreation

Southwest portion of the area is steep, rugged and remote and offers the highest opportunity for solitude and challenge using outdoor skills. The area is very lightly visited, mainly by hunters in the fall, due to limited access and the lack of facilities or special features that attract visitors. There is a private inholding within its boundaries. The polygon is bordered by private land that is mostly undeveloped, facilitating opportunities for solitude or primitive and unconfined recreation in the area. There is motorized access on the perimeter of the polygon. Motorized system trail 34E48 bisects the polygon with prolific unauthorized motorized use northeast of that trail and no evidence of unauthorized use southwest of the trail.

Other Features of Value

This area contains a relatively intact stands of black oak forest and canyon live oak woodland. It also has a metamorphic roof pendent running through it with a mile long and 1,000 foot thick piece of marble within it.

Manageability

The size, shape, and steep and rugged terrain would be conducive for managing wilderness characteristics; however the isolated location away from other wilderness in addition to adjacent private lands, a private land inholding, and motorized use complicates management or enforcement; motorized use on remnants of a complex road system has proven to be beyond the resources of the agency at this time.

Polygon 36 (Adjacent to Sequoia-Kings Canyon Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Past timber harvest activity with the associated level 1 roads and some plantations substantially affect the appearance of naturalness. Opportunities for solitude or primitive and unconfined recreation are limited due to sounds from motorized use. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 693 acres.

General Description

Polygon 36 is a mid-elevation, mountainous area primarily of montane hardwood and mixed conifer vegetation. The area is 2,089 acres and bordered by roads, private land, and has an approximately 0.75 mile contiguous border with Sequoia-Kings Canyon Wilderness. It is within the Giant Sequoia National Monument (Map B-56, Sequoia National Forest evaluation map A and Map B-57, Sequoia National Forest evaluation map B). This is a small polygon that is nearly bisected by a private land parcel.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (14 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 6 ecological groups with a total area of 693 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

A large portion of the area shows signs of current and past human activity. The area includes past timber harvest activity, including plantations. Forest Service Roads 15S09 and 15S09B provide access to a private land inholding. There are communication towers on adjacent private land that can be seen from some areas of the polygon. Appearance of naturalness is affected by off-highway vehicles trails, level 1 roads, plantations, and uses on adjacent lands. The area has been affected by timber harvest, cattle grazing and fire suppression. The unharvested forest provides valuable wildlife habitat and good water quality. There are bullfrogs in nearby Pierce Pond.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is well used by the public for dispersed recreation. This is a popular off highway vehicle use area. Firewood cutting occurs in the area. Opportunities for solitude or primitive and unconfined recreation are limited due to sounds from motorized use.

Other Features of Value

There are no unique or high value special resources that contribute to the wilderness characteristics of the area.

Manageability

Access to private land is provide on forest system routes.

Polygon 63 (Lower Kern River Gorge)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to the presence of authorized motorized trails within the polygon. The remaining portion of this polygon is less than 5,000 acres, and configured in such a way that proximity to a highway to the east of the area, a paved County road to the south, and authorized motorized trails and an extensive network of authorized forest system roads to the south and east, directs that sight and sounds from all these sources are pervasive and limit opportunities for solitude or primitive and unconfined recreation. There are plantations authorized for treatment in the east corner of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,543 acres.

General Description

Polygon 63 is a low elevation, mountainous canyon area along the southeast side of the lower Kern River gorge (Map B-61, Sequoia National Forest evaluation map F). It ranges in elevation from 3,200 feet to 5,800 feet. Vegetation is dominated by chaparral with expansive areas of blue oak woodland, live oak forest, black oak woodland and lower mixed conifer forest. The 5,223 acres area is approximately 3 miles wide and 12 miles long, and roughly rectangular in shape. It is not contiguous with any other roadless or wilderness area. It is bordered by Bureau of Land Management, National Forest System and a small amount of private property. This polygon is bordered by a road that also borders Polygon 73.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (33 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 1,543 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. Each of the ecological groups comprises less than 1,000 acres in the polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This area contains a large relatively intact stand of ecologically important blue oak, canyon oak, and black oak. This provides important habitat linkage between low elevation annual grassland and higher elevation mixed coniferous forest (3,500 feet vertical). There is an authorized motorized trail area in the northern portion of the polygon. Forest Service Road 28S09 runs close to the western boundary and Forest Service Road 18S14 runs close to the southern; both are open to all motorized vehicles. The Breckenridge Road, County Route 218, is near the southeastern boundary. The Breckenridge and Cow Flat grazing allotments are active and are visited by cattle permittees in the course of managing their livestock and livestock infrastructure. There are wild pigs and small areas of invasive plants. There is evidence of timber harvest due to the presence of plantations, which are currently authorized for thinning treatments.

Opportunities for Solitude or Primitive and Unconfined Recreation

This is a very popular off highway vehicle use area. There is an authorized motorized trail network in the northern portion of the polygon. Sights and sounds of adjacent activities on the lower Kern River and the two-lane State Highway 178, a major route connecting the Bakersfield metropolitan area with the Kern River Valley are noticeable along some portions of the northwestern boundary.

Other Features of Value

This area contains a large relatively intact stand of ecologically important blue oak, canyon oak, and black oak. This provides important habitat linkage between low elevation annual grassland and higher elevation mixed coniferous forest (3,500 feet vertical). Condor roosting areas are found in this area as well. It also provides important riparian habitat for the rare Kern slender salamander.

Manageability

The size and shape of the polygon is conducive for management as wilderness. Management as wilderness would displace existing motorized and non- motorized recreation users and could result in management challenges in the future.

Polygon 66 (Saturday Peak–Greenhorn Roadless)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area has minor developments, primarily related to grazing activities and the Oak Flat fire lookout/recreation rental. Sounds from Highway 178 would penetrate most of this polygon. Opportunities for solitude or primitive and unconfined recreation are limited in a small area due to an authorized motorized trail and a highly developed recreation area. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 3,123 acres.

General Description

Polygon 66 is a low elevation, mountainous canyon area along the north side of the lower Kern River Gorge (Map B-61, Sequoia National Forest evaluation map F). It ranges in elevation from 1,500 feet to 4,500 feet. The area is 8,289 acres of land about 1.5 miles wide and 9 miles long, roughly rectangular in shape. It is not contiguous with any other roadless or wilderness areas, and the western perimeter is on the forest boundary closest to the Bakersfield urban area. It is bordered by private land on the north and by the Kern River on the south.

National Vegetation Classification System data, based on the polygon size of 8,289 acres, indicates less than 1 percent of the area of the polygon (23 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 6 ecological groups with a total area of 3,123 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Central California Valley and Southern Coastal grassland and California Central Valley mixed oak savanna.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Vegetation is dominated by annual grassland with areas of blue oak woodland, live oak woodland and chaparral. Visible developments within or adjacent to the polygon include livestock structures, a power transmission line, recreation use along the Kern River, Oak Flat Lookout, a heavily used recreation rental, and a few off-highway vehicle trails near the lookout. It is overlain by the Oak Flat Grazing Allotment and visited by cattle permittees in the course of managing their livestock and livestock infrastructure. The two-lane section of California State Highway 178 runs along the southern and eastern boundary. There are several developed day use sites just outside the perimeter of the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited due to motorized activities and highly developed recreation sites along the perimeter; especially from Highway 178. Sights and sounds would affect much of the polygon.

Other Features of Value

This area contains a relatively intact stand of ecologically important Blue Oak woodland.

Manageability

Size and shape would be conducive for management.

Polygon 73 (Lightner Peak – Mill Creek)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Although the area possesses wilderness characteristics and unique ecological and wildlife features, opportunities for solitude or primitive and unconfined recreation are limited in the majority of this polygon due to the prevalence motorized transportation; the two non-motorized areas of this polygon are bordered by authorized motorized system routes to the east and west, by California State Highway 178 (a major connector between the Bakersfield metropolitan area and the Kern River Valley) that runs close to the northwestern boundary and a paved road to the south. Sight and sounds from all these sources limit opportunities for solitude or primitive and unconfined recreation. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 4,483 acres.

General Description

Polygon 73 is a low elevation, mountainous canyon area along the southeast side of the lower and mid elevation Kern River Gorge (Map B-61, Sequoia National Forest evaluation map F). The 15,128 acre area ranges in elevation from 3,200 feet to 6,700 feet and is bordered by Bureau of Land Management, National Forest System land and private property.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (143 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 4,483 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland and savanna and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Vegetation in this area is dominated by chaparral with expansive areas of blue oak woodland, live oak forest, black oak woodland, and lower mixed conifer forest. Sycamore forests are found in riparian areas. More than one-third of the polygon has three authorized motorized system routes

that are open to the public; one small motorized area is in the southwest corner of the polygon, one large motorized area at the far eastern portion of the polygon, and a large motorized area that bisects the non-motorized area in two. Other developments in the polygon include multiple non-system motorcycle trails and livestock fences. The area is overlain by the Hobo Ridge Grazing Allotments. The appearance of naturalness is somewhat affected by the presence of wild pigs, small areas of invasive plants and tree plantations. Developments adjacent to the polygon include those associated with activities on the lower Kern River, the Forest Service Democrat fire station, California State Highway 178 and Kern Canyon Road.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is visited by motorized recreationists on several authorized and unauthorized motorized system routes within and adjacent to the area. Unauthorized off-highway vehicles routes are extensive north of road 28S0 between Breckenridge Meadow and Golf Meadow. Visitors enjoy spectacular sycamore riparian forests, salamanders and wildflower displays in the spring, and hunting in the fall. Opportunities for solitude or primitive and unconfined recreation are limited in the majority of this polygon due to the prevalence motorized transportation; the two non-motorized areas of this polygon are bordered by authorized motorized system routes to the east and west, by California State Highway 178 (a major connector between the Bakersfield metropolitan area and the Kern River Valley) that runs close to the northwestern boundary and a paved road to the south. Sight and sounds from all these sources limit opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

This area contains large relatively intact stands of ecologically important blue oak, canyon oak, and black oak forests, and sycamore forests. This provides important habitat linkage between low elevation annual grassland and higher elevation mixed coniferous forest (3,500 feet vertical). A stand of endemic Piute cypress (1 of 13 in the Kern Valley area) occurs in the eastern portion of this polygon. Condor roosting areas are found in this area as well. It also provides important riparian habitat for the rare Kern slender salamander.

Manageability

The area is accessed from the bottom along the lower Kern Canyon Road and from the top of Breckenridge Road. The size and shape is conducive for management as wilderness; however, the motorized access within and at the boundaries makes the area difficult to manage as wilderness.

Polygon 99 (Sunday Peak)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails within the polygon, and a paved road and an extensive network of authorized forest system roads around the perimeter. Portions of the area are within two authorized active restoration and fuels reduction treatments that include use of motorized tools. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 3,224 acres.

General Description

Polygon 99 is a mid-elevation mountainous area. The 9,386 acre area is elongated and irregularly shaped. It is not contiguous with any wildernesses; it is partially within the Giant Sequoia National Monument (Map B-60, Sequoia National Forest evaluation map E). The communities of Posey, Sugar Loaf, and Panorama Heights are adjacent to this area.

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (7 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 3,224 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Vegetation primarily consists of oak woodland with open stands of pine along the northern half of the unit. Higher elevations are transitional from oak brush lowlands to open stands of mixed pine with red fir on north facing slopes. The visibility of roads and motorized trails is pervasive in this polygon. There are several authorized motorized routes within the polygon and the polygon is surrounded by roads, including a paved road, and private land developments.

Fire suppression activities have led to denser stands of shade tolerant species throughout the entire unit. Forest stand average age is lower than it would have been before fire suppression, while the brush field average age is higher. Vegetation management projects to reduce fire risk to adjacent private property structures has recently occurred on about 5 percent of the area, along the northern boundary. Some patches of clear cuts from past timber harvest treatments are noticeable to the general recreational visitor. Apparent naturalness is somewhat impacted on approximately 30 percent of the area by grazing effects altering species composition, especially in oak woodlands. Livestock use is concentrated in two grazing allotments on the west side of the area. Approximately ten percent of the area is considered developed, including pipelines to provide drinking water to private landowners, fence lines, a stock driveway and livestock troughs. Non-native species include wild pigs, rainbow trout, non-native cheat grass and thistle. Air quality is poor to fair during summer months, fluctuating with fire events. Air quality related to human activity in the adjacent San Joaquin Valley has been improving over the past decade.

Opportunities for Solitude or Primitive and Unconfined Recreation

Hikers use five system trails during the summer for both day use and overnight use. There is some mountain biking. The area is popular in the fall for deer hunting. There is a primitive recreation opportunity along existing trails 32E38 and 31E60 because of the availability of water sources. There is minimal recreational use on the rugged steeper slopes. Opportunities for solitude or primitive and unconfined recreation are limited in most areas due to the authorized motorized system routes within the polygon and the extensive network of forest system roads and paved road around the perimeter.

Other Features of Value

The area is important habitat connectivity for the Pacific fisher, and the Greenhorn fritillary that exists on the western slopes of the Greenhorn Mountains and nowhere else. There are a large

number of prehistoric Native American trails and associated sites of significance to Native American Tribes.

Manageability

There are 7 special use permits to adjacent private property owners for pipelines that provide drinking water from streams. The dense stand conditions within this polygon are a concern in areas proximate to private property due to high fuel conditions. Portions of the area are within two authorized active restoration and fuels reduction treatments that include use of motorized tools. Authorized motorized route use is prevalent within and bordering this polygon. Managing use would be difficult, due to the number of access points and the difficulty in patrolling.

Polygon 120 (Lion Ridge Roadless)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This area provides habitat for a number of sensitive plants and animals, including the Starvation Grove Nest Site and Lion Ridge Roost Area for the California condor. The appearance of naturalness is somewhat impacted due to approximately 25 percent of the extensively logged, highly departing from the appearance of naturalness. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads and private roads bordering the entire polygon; sights and sounds would likely penetrate throughout much of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. There are no ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,580 acres.

General Description

Polygon 120 is a 6,865 acre area that is entirely within the Giant Sequoia National Monument (Map B-60, Sequoia National Forest evaluation map E). It includes the Starvation Giant Sequoia Grove, and is adjacent to Packsaddle and Deer Creek Giant Sequoia Groves.

National Vegetation Classification System data indicates none of the area of the polygon consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 2,580 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Mediterranean California mesic mixed conifer forest and woodland and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 120 is a mid-elevation mountainous area of montane hardwood, shrubs and annual grasses in the lower elevations and to Sierran mixed conifer in the higher elevations. It also contains a grove of giant sequoia. Most of the area, 4,265 acres, is in the Lion Ridge Inventoried Roadless Area. Fire suppression has led to denser stands of shade tolerant species throughout the entire unit. About 25 percent of the area has been logged and some associated road beds exist. The area contains a fuel break. The entire area is in 2 grazing allotments. Grazing improvements

are fence lines, a stock driveway and water troughs. Impacts associated with grazing include intense type converted annual grasslands. Grazing also occurs at higher elevations in oak woodlands.

There are three Forest Service system roads in the unit (23S65, 23S65A, 23S65) that are open to public motor vehicle use. Private lands comprise 10 percent of the polygon boundary with the community of Pine Flat and their access roads immediately to the west of the polygon. The area has frequent illegal marijuana cultivation sites with associated illegal herbicide use. Introduced species include feral pigs and invasive plants.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are 2 system trails in the area, one that is designed for bicycle use and one that is designed for pack and saddle stock. There are primitive recreation opportunities at the higher elevations, although historically little use has occurred. Opportunities for solitude or primitive and unconfined recreation are limited due to the three Forest Service system roads in the unit (23S65, 23S65A, 23S65) that are open to public motor vehicle use, an extensive network of authorized forest system roads and private roads bordering the polygon; and the adjacent community of Pine Flat shares about ten percent of the boundary. Some areas within the interior are screened from sight and sound of roads.

Other Features of Value

The Starvation Giant Sequoia Grove provides a very unique and high value special resource that contributes to the wilderness character of the area. The polygon includes the historic Starvation Grove Nest Site and the Lion Ridge Roost Site, which receive special management for the protection of California condor roosting and nesting habitat. The area is also adjacent to Packsaddle and Deer Creek Giant Sequoia Groves. The area does contain several Forest Service sensitive species including the Greenhorn fritillary, fisher, marten, goshawk, California spotted owl, and occasional visitations by California condor. The area includes a large block of contiguous conifer and hardwood forest.

Manageability

The dense stand conditions within this polygon are a concern in areas proximate to private property due to high fuel conditions. Controlling motorized use within the unit would be difficult due to the number of access points and the difficulty in patrolling.

Polygon 160 (Slate Mountain)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The polygon is within an inventoried roadless area and the Giant Sequoia National Monument. The Slate Mountain Botanical Area is within this polygon. There are opportunities for solitude or primitive and unconfined recreation in most of the area. It is bordered by highways to the north and east, and there are developed recreation sites to the north. There is a heliport along the eastern boundary of the unit. The Summit National Recreation Trail bisects the area and allows mountain bike use and provides good access for recreation visitors. Opportunities for solitude or primitive and unconfined recreation are limited in areas with authorized forest system roads that are open to the public, or near the highways, heliport and developed recreation areas. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the

National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,779 acres.

General Description

Polygon 160 is a 16,126 acre area located south of Highway 190 and west of the Western Divide Highway (Map B-58, Sequoia National Forest evaluation map C). The polygon is within an inventoried roadless area and the Giant Sequoia National Monument.

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (40 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 2,779 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 160 is a mid- to high-elevation mountainous area composed primarily of mixed conifer, Giant Sequoia groves and sub-alpine areas near Slate Mountain. The polygon is partially within an inventoried roadless area and the Giant Sequoia National Monument. Developments within the area include four Forest Service system roads under special use permits associated with adjacent private property parcels, a historic lookout cabin on Slate Mountain that is not maintained, powerlines. Motorized use is limited to a snowmobile route over a small portion of the unit's eastern edge. The Summit National Recreation Trail bisects the area and allows mountain bike use. The majority of unit is populated with non-obtrusive non-system roads that were used for access. Highway 190 and the Western Divide Highway border the polygon; they are major travel routes into the southern portion of the Giant Sequoia National Monument. Immediately adjacent to this unit are three small communities and a Forest Service heliport. There are adjacent recreational developments.

Fire suppression activities have led to denser stands of shade tolerant species throughout the entire unit. About five percent of the area was logged with visible associated road beds and plantations. About 25 percent of the unit (southern portion) is part of a grazing allotment. Grazing improvements include fences and water troughs. Grazing activity mostly occurs in meadows; long term monitoring indicates meadows are within their natural range of variation. Some non-native fish are stocked within the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are opportunities for solitude or primitive and unconfined recreation in the area, overnight camping generally occurs during hunting season. The Summit National Recreation Trail and Forest Service Trail 31E31 bisect the area and provide good access for recreation visitors. Highway 190 and the Western Divide Highway are major travel routes in the southern portion of the Giant Sequoia National Monument. There are multiple developed and undeveloped campgrounds along the northern perimeter. There is a heliport along the eastern boundary of the unit. Forest Service Roads 22S63 and 22S63A dead end in the unit.

Other Features of Value

There are Giant Sequoia Groves within the polygon and Slate Mountain is an impressive peak with rock outcrops. The Slate Mountain Botanical Area is within this polygon.

Manageability

The dense stand conditions within this polygon are a concern in areas proximate to private property due to high fuel conditions. Controlling motorized use within the unit would be difficult where the unit is adjacent to roads, due to the number of access points and the difficulty in patrolling.

The manageability concerns include the established use of mountain bikes on the Summit National Recreation Trail and 4 special use road permits to adjacent private property owners. Noise from system roads and campgrounds along portions of the perimeter may be heard from a mile away. Noise associated with vehicular travel on adjacent roads and helicopter travel will have some impact on solitude.

Eight percent of the area is within a Wild Urban Interface Defense Zone and 61 percent is within a Threat Zone. Achieving the desired vegetative modification goals would be difficult, if actions to achieve these goals are limited to natural fire.

Polygon 162 (North of Black Mountain)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The polygon is within the Giant Sequoia National Monument as well as an inventoried roadless area. The dense stand conditions within this polygon are a concern in areas proximate to private property and the Tule River Indian Reservation due to high fuel conditions. Traffic noise originating from the highway corridor and associated recreation facilities can be heard from the interior of the unit; however, there are opportunities for solitude or primitive and unconfined recreation throughout some of the area; however, there are limited opportunities in the small area with an authorized forest system road that is open to the public. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System, however, comprise 6,059 acres.

General Description

Polygon 162 is a low- to mid-elevation mountainous area north of the Black Mountain and south of Highway 190 (Map B-58, Sequoia National Forest evaluation map C). The 15,806 acre area is oblong in shape and located within an inventoried roadless area and the Giant Sequoia National Monument.

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (1 acre) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 7 ecological groups with a total area of 6,059 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are

Mediterranean California mesic mixed conifer forest and woodland and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Vegetation is composed primarily of chaparral, oak woodlands and mixed conifers, and a portion of a grove of giant sequoias is located in the southern portion. Highway 190 and recreation developments occur along the north border and are visible. The Tule Indian Reservation is located along the southern border. The polygon is within an inventoried roadless area and the Giant Sequoia National Monument.

Fire suppression has led to denser stands of shade tolerant species throughout the entire unit. Developments within the area are two Forest Service system special uses permitted roads associated with adjacent private property parcels and one special use permit for an oil and gas pipeline. There is one inactive and unnoticeable mine in the area. Only 1 percent of the area has been impacted by historic logging with limited road beds. Two range allotments cover approximately two-thirds of the area with some water troughs and fence lines. Non-native species in the area include fish, tree-of-heaven, Italian thistle and tocalote.

Opportunities for Solitude or Primitive and Unconfined Recreation

Portions of Forest Service Trail 30E29 cross the northern edge of the unit, but no current trails provide access to any large portion of the unit. Several old trails once accessed the area but are no longer maintained. The area is primitive and quiet once access is gained by overland hiking that is difficult in some portions due to dense stands of shrubs and steep terrain. Traffic noise originating from the highway corridor and associated recreation facilities can be heard from the interior of the unit; however, there are opportunities for solitude or primitive and unconfined recreation throughout some of the area, with the exception of the small area with an authorized forest system road that is open to the public.

Other Features of Value

There are likely prehistoric sites and trails in the area as it is adjacent to the Tule River Indian Reservation. A small portion of the Black Mountain Giant Sequoia Grove is within the southern tip of the unit. There are marble outcrops and travertine formations in the area. The area contains a number of rare and important species such as Western Pond Turtle, Delphinium, and Kaweah brodiaea.

Manageability

The dense stand conditions within this polygon are a concern in areas proximate to private property and the Tule River Indian Reservation due to high fuel conditions. Controlling motorized use within the unit would be difficult where the unit is adjacent to roads, due to the number of access points and the difficulty in patrolling. There are two special use road permits to adjacent private property owners and a permit for the oil and gas pipeline.

Polygon 173 (South of Wishon)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to a highway, two paved county roads, and a network of authorized forest system roads around the perimeter of this small triangular-shaped polygon. Sights and sounds from roads penetrate throughout much of the polygon. The appearance of naturalness is affected by many man made developments within this polygon: power lines; flumes; an aqueduct that bisects the western portion; tunnels; a dam; and a water weir. Many of these are FERC licensed facilities for both PG&E and SCE, and require motorized access and maintenance with motorized tools. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. There are no ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,045 acres.

General Description

Polygon 173 is a 5,307 acre area located north of Highway 190, east of Forest Service Road 20S91, and south and west of County Road 208 (Map B-58, Sequoia National Forest evaluation map C). The polygon is within the Giant Sequoia National Monument.

National Vegetation Classification System data indicates none of the area of the polygon consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 6 ecological groups with a total area of 2,045 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 173 is a lower to mid-elevation mountainous area composed primarily of chaparral, oak woodlands and mixed conifers. The polygon is bordered by Highway 190, two paved county roads and authorized forest system roads; there are also private property, recreation and residential developments. The western portion is developed with special use permitted activity, most of which are linked to numerous Federal Energy Regulatory Commission licensed facilities in the unit. The developments within the area include power lines, flumes, aqueduct, penstocks, tunnels, dam, water weir and access roads. The aqueduct runs through the western portion of the unit. The special use permits include motorized access and helicopter flights. The polygon is adjacent to mountain communities to the east and south. Fire suppression activities have led to denser stands of shade tolerant species. About 5 percent of the area has been logged and some associated road beds and plantations exist. Only the center portion of the unit is undeveloped. The overall character of the area doesn't appear natural. Some non-native species are tocalote, cheatgrass and yellow star thistle.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are very limited opportunities for solitude or primitive and unconfined recreation in the area. It is difficult to escape the noise associated with the motorized and special use permit activities described above in an area of only just over 5,000 acres. There are opportunities for primitive recreation activities away from existing roads and other infrastructure. Currently there is very little established primitive activity use, such as overnight camping away from routes. As the visitor moves away from the roads that encircle this polygon, the steep terrain and undeveloped character of the landscape offers a high degree of challenge and risk while using outdoor skills. Private property, recreation and residential development at the perimeter, and dispersed recreation use along streams limit the experience of adventure, excitement, challenge, initiative or self-reliance in portions of the area.

Other Features of Value

There is likely a prehistoric trail in the area. A portion of the Alder Creek Giant Sequoia Grove is within the eastern edge of the unit. The area contains western pond turtle, Springville clarkia, Pierpoint Springs' dudleya and Meadow star-tulip.

Manageability

There are numerous Federal Energy Regulatory Commission licensed facilities that require motorized access, including by helicopter, and mechanical maintenance in the unit for both PG&E and SCE. The dense stand conditions within this polygon are a concern in areas proximate to private property due to high fuel conditions.

Polygon 190 (Dennison Peak)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

It is an inventoried roadless area. The unit is adjacent to National Park Service lands and near Moses Recommended Wilderness contained in the Giant Sequoia National Monument Plan Record of Decision that is adjacent to the Golden Trout Wilderness. The paved Tulare County Road 276 and private land parcels are immediately adjacent to this unit. Fire suppression activities have led to denser stands of shade tolerant species and denser understory across approximately fifty percent of the area. The reintroduction of a more natural fire regime would restore the ecosystem to the original vegetative look and provide enhanced habitat opportunities to the plants and animals within the unit. However, relying on natural fire ignition to achieve this goal would be difficult where the unit shares a boundary with private property.

There are opportunities for solitude or primitive and unconfined recreation due to absence of motorized routes. Little recreation use has historically occurred in the area. Cross country travel is difficult in areas with dense, impenetrable vegetation. The eastern portion of the unit is very steep and rugged and difficult to transverse.

This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,530 acres.

General Description

Polygon 190 is a 7,100 acre area located in the Dennison Peak area, north of Tulare County Road 276 (Map B-58, Sequoia National Forest evaluation map C). It is within an inventoried roadless area and the Giant Sequoia National Monument, and is adjacent to Sequoia National Park and to Moses Recommended Wilderness.

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (14 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 7 ecological groups with a total area of 2,530 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Mediterranean California mesic mixed conifer forest and woodland and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 190 is a mid-elevation mountainous area composed primarily of chaparral, oak woodlands and mixed conifers. The paved Tulare County Road 276 and private land parcels are immediately adjacent to this unit. Fire suppression activities have led to denser stands of shade tolerant species and denser understory across approximately fifty percent of the area. There is one noticeable mine in the area with two minor structures. There are two special use permitted water lines within the unit. Approximately half of the unit is part of a grazing allotment, with some associated water troughs and drift fences. Non-native species include wild pigs, Italian thistle, tocalote and annual noxious weeds.

Opportunities for Solitude or Primitive and Unconfined Recreation

Portions of Forest Service Trail 29E16 cross the west side of the unit and Forest Service Trail 19S09 is along the southern edge. Approximately half the unit is covered with dense vegetation (shrub fields) and is not penetrable for cross country travel. The eastern portion of the unit is very steep and rugged and difficult to transverse. There are opportunities for solitude or primitive and unconfined recreation due to motorized routes being absent; however, little recreation use has historically occurred in the area. The potential for solitude is high, with only one trail and 1 road. While some areas within the interior are screened from sight, views of private property, roads and the San Joaquin valley development is frequent at higher elevations.

Other Features of Value

There are likely prehistoric/historic sites and trails in the area. A small portion of the Dillonwood and Dennison Giant Sequoia Groves are within the eastern edge of the unit (the rest of the grove is on Park Service lands). There are scenic granite outcrops in the unit.

Manageability

Fire suppression activities have led to denser stands of shade tolerant species and denser understory across approximately 50 percent of the area. The reintroduction of a more natural fire regime would restore the ecosystem to the original vegetative look and provide enhanced habitat opportunities to the plants and animals within the unit. However, relying on natural fire ignition to achieve this goal would be difficult where the unit shares a boundary with private property. Controlling motorized use within the unit would be difficult where the unit is adjacent to roads,

due to the number of access points and the difficulty in patrolling. There are two special use permits for water pipes. Due to the narrow width of the county road, scenic overlook pullouts are limited.

Polygon 227 (Oat Mountain)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area has some wilderness characteristics but would be very difficult to manage as wilderness because of its location relative to human influences and its shape. Opportunities for solitude or primitive and unconfined recreation are limited due to forest system roads providing authorized motorized access to a private land inholding and access to power transmission lines; these routes are open to the public, including off-highway vehicle use. The area is also surrounded by a paved county road to the north, a network of authorized forest system roads to the east and private roads to the south and west. Sights and sounds from roads would likely penetrate throughout much of the polygon. In the northern portion of the polygon, there are high use recreation facilities along the border, including several developed campgrounds and a rental cabin. Sights and sounds likely penetrate into that portion of the roadless area, limiting the opportunity for solitude. Authorized fuel treatments, including mechanical treatments are occurring in the southern portion of this polygon. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System, however, comprise 11,961 acres.

General Description

Polygon 227 is a 15,358 acre area located along the lower reaches of the Kings River. The Pine Flat Reservoir forms the northwest boundary, and the unit is adjacent to the Giant Sequoia National Monument (Map B-56, Sequoia National Forest evaluation map A).

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (16 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 11,961 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California Central Valley mixed oak savanna, California lower montane blue oak-foothill pine woodland, Mediterranean California mixed oak woodland, and Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 227 is a low elevation, mountainous area consisting primarily of oak woodland and brush. Large areas of private property border the L-shaped polygon to the west and south; smaller private land parcels are located along the north and east borders; one private parcel is within the boundary of this polygon. The west side of the polygon is adjacent to a power transmission line. There is a fire lookout and radio facility on the east side and a highly developed recreation area along the northern border, including Forest Service Camp 4, Camp 4 ½, Green Cabin, and Mill Flat campgrounds. Within the polygon there are access roads to a private inholding that are open

to all vehicles, including off-highway vehicles. The area has been affected by cattle grazing, fire suppression, non-native wild pigs and areas of invasive plants. The area is visited by cattle permittees in the course of managing their livestock and livestock infrastructure.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational use is light directly in the polygon, but consistent and includes wildflower walks and bird watching in the spring, and wildlife and bird watching, hiking and hunting in the fall. The terrain is steep in the roadless area in the north; in the southern portion there are access roads that are open to the public. There are multiple nearby amenities associated with activities on the Kings River and Pine Flat Reservoir. Opportunities for solitude or primitive and unconfined recreation are limited due to forest system roads providing authorized motorized access to a private land inholding and access to power transmission lines; these routes are open to the public, including off-highway vehicle use. The area is also surrounded by a paved county road to the north, a network of authorized forest system roads to the east and private roads to the south and west. Sights and sounds from roads would likely penetrate throughout much of the polygon. In the northern portion of the polygon, there are high use recreation facilities along the border, including several developed campgrounds and a rental cabin. Sights and sounds likely penetrate into that portion of the roadless area, limiting the opportunity for solitude.

Other Features of Value

There are no unique or high value special resources that contribute to the wilderness characteristics of the area.

Manageability

A large proportion of the boundary of this polygon is with private land, which would make management as wilderness difficult. There is a private edge holding on the northwestern boundary that create an odd shape, and the narrow shape of the unit as a whole maximizes the area exposed to activities on the boundaries that are not conducive to wilderness management. Activities are those associated with motorized use, developed facilities, utilities, administrative sites, and multiple forms of recreation use that is not primitive or unconfined in nature. There is also authorized motorized access to a large private inholding in the center of the eastern portion of the polygon and access to power transmission lines. These roads are open to the public, including for off-highway vehicles. Authorized fuel treatments, including mechanical treatments are currently occurring in the southern portion of this polygon.

Polygon 1364 (North of Coffee Camp)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The close proximity to residential and rural landscapes, roads, special use permits for non-recreational uses, and a multitude of popular developed recreation sites affects opportunities for solitude or primitive and unconfined recreation. The steep terrain, low elevation cover and elongated shape of the polygon do not screen the heavily traveled roads on the south and north boundaries. The water flume, utility lines and residences are pervasive and further influence the lack of opportunity for solitude or an area free of permanent improvement or modern human occupation. Due to the proximity of local communities, visitor use is high and concentrated, mostly near the edges and encounters are likely. Residential development and community growth may require installation of new communication structures, and flume capacity may need to be

increased to expand domestic water supply. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 3,514 acres.

General Description

Polygon 1364 is an elongated and roughly triangular 9,203 acre area; elevations begin at 1,500 and climb to over 5,000 feet. The entire polygon is within the Giant Sequoia National Monument (Map B-58, Sequoia National Forest evaluation map C). The western boundary is the forest boundary that is shared with the town of Springville and the Bureau of Land Management; the southern boundary follows Forest Service Road 20S16, the Middle Fork and the North Fork of the Middle Fork of the Tule River.

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (18 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains eight ecological groups with a total area of 3,514 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The steep and divided terrain is rocky, dominated by lower elevation brush, chaparral, and oak woodlands with some mixed conifer at the highest elevations. The western boundary is with private rural residences and ranches. Improvements and infrastructure include range improvements, a functioning water flume, a communications tower, hydropower plant, quartz mine, roads and utilities infrastructure that are maintained under special uses permits. Frequent access to these uses is provided on roads. Water rights are established for all streams and supply local communities and a hydropower plant. The large flume runs the length of the polygon, beyond the unit boundary, and delivers water to the power plant. Numerous grazing-related improvements such as fences and water troughs are present. Highway 190, Wishon Road and Bear Creek Road form the boundary with 2 heavily used day use recreation areas, a developed campground and cabin rental, utilities infrastructure and industrial uses on the edge but not within the polygon. The Mountain Home State Forest on the northern boundary has multiple developed recreation facilities. There is a private property inholding.

The composition and succession of the native plant community is altered, encouraging non-native invasive species and altering the role of fire. Tocalote is very prevalent across the area, along with invasive thistles and non-native grasses including cheat grass. Their presence is generally increasing. Upstream management has caused sediment problems although soil conditions are stable, and air quality is poor from human influences outside of the area. Streams and vegetation provide wildlife connectivity and there are no reported feral species.

Opportunities for Solitude or Primitive and Unconfined Recreation

The river and a nearby state forest are highly developed and heavily used recreation areas, including day-use sites, campgrounds and dispersed recreation areas. The numerous

improvements and infrastructure within and adjacent to the area that are under special use permits limit opportunities for solitude or primitive and unconfined recreation in the area. A communication tower and a flume which carries water to the power plant are visible, and frequent access to these facilities must be provided. A quartz mine is lightly active and semi-noticeable. Highway 190, Wishon Road and Bear Creek Road provide access to two heavily used day use recreation areas and two developed campgrounds adjacent to the area, increasing the probability of encounters with other visitors.

Other Features of Value

The area is very typical of foothill communities on the west side of the Sierra Nevada. There is one threatened and endangered species.

Manageability

The eastern tip of the polygon is adjacent to the proposed Moses Wilderness, while the northern and southern boundaries are bounded by highways that provide access to recreation developments, mountain communities and rural residences. Utilities infrastructure and industrial uses are on the edge of Highway 190, Wishon Road, and Bear Creek Road. Private property bounds the western base of the triangle just north of the community of Springville. Views to the north and west are of development outside the area. There are a number of legal easements for the flume, access roads and utilities. There is 1 private inholding with a private access road. There are existing water rights on all streams in the area, 3 active grazing allotments and multiple special use permits. Wilderness characteristics are lacking and are not likely to be restored due to the uses of lands adjacent to the polygon. The elongated shape with heavily used roads on the long boundaries, the proximity to private land, communities, past use and multiple special use permits makes the management of this area as a wilderness difficult. Fuels reduction to protect private property and protect the objects of interest in the Giant Sequoia National Monument would affect wilderness management. Residential development and community growth may require installation of new communication structures, and flume capacity may be increased to expand domestic water supply.

Polygon 1377 (Adjacent to Monarch Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area is adjacent to the Monarch Wilderness, includes the Agnew Roadless area, and is adjacent to Sequoia and Kings Canyon National Parks and is located entirely within the Giant Sequoia National Monument. Part of the area would be manageable as an extension of the existing wilderness. The southern 50 percent of the area is significantly impacted by past timber harvest activity and includes many plantations and level 1 roads. Opportunities for solitude or primitive and unconfined recreation are limited in this part of the areas due to an extensive network of authorized forest system roads that are open to the public. This part of the area would be difficult to manage as wilderness due to the extensive road access and potential for future fuels management needs in the plantations. Reshaping the area to eliminate the southern 50 percent would make it more manageable and improve the overall wilderness character. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres.

Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,702 acres.

General Description

Polygon 1377 is an 11,559 acre, mid to high elevation area that is located along the Kings River. The area is adjacent to the Monarch Wilderness, includes the Agnew Roadless area, and is adjacent to Sequoia and Kings Canyon National Parks (Map B-57, Sequoia National Forest evaluation map B).

National Vegetation Classification System data indicates 1 percent of the area of the polygon (85 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains four ecological groups with a total area of 2,702 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1377 is a mountainous area primarily of mixed conifer forests. The overall character of the polygon appears natural and includes a few thousand acres of giant sequoia groves and the Windy Gulch Geologic area. This is a highly scenic and natural appearing area. There has been little effect to natural plant, wildlife, watershed and soils conditions. The northern 50 percent of the area includes the Agnew Roadless area, shows very little indication of intrusion by humans, and is very lightly visited by recreationists. The southern half of the area has a significant history of timber harvest, with associated level 1 roads and plantations. This includes eight authorized forest system routes that are open to public use, and several roads that are closed to public use. The roads are all located in the southern portion of the area and are associated with past timber harvest activity. There is one electronic site that is on the boundary of the area, accessed by an existing road. There are several private property parcels along the southern boundary.

Opportunities for Solitude or Primitive and Unconfined Recreation

The northern 50 percent of the area, mainly the Agnew Inventoried Roadless Area, provides some opportunities for solitude or primitive and unconfined recreation. Opportunities for solitude or primitive and unconfined recreation are limited in the southern half of the area, due to an extensive network of authorized forest system roads that are open to the public.

Other Features of Value

The area includes a few thousand acres of Giant Sequoia groves. There is also a portion of the Windy Gulch Geologic area which includes limestone caverns.

Manageability

The area is adjacent to the Monarch Wilderness, includes the Agnew Inventoried Roadless Area, and is adjacent to Sequoia and Kings Canyon National Parks. The majority of the area would be manageable as an extension of the existing wilderness. The southern 50 percent of the area is significantly impacted by past timber harvest activity and includes many plantations and roads that have been closed to public use. This part of the area would be difficult to manage as

wilderness due to the extensive road access and potential for future fuels management needs in the plantations.

Polygon 1378 (Adjacent to John Muir and Monarch Wildernesses)

This 71,974 acre polygon crosses the forest boundary between the Sequoia National Forest and the Sierra National Forest (Map B-56, Sequoia National Forest evaluation map A or Map B-66, Sierra National Forest evaluation map C). The polygon was evaluated as one whole unit, 14,609 acres on the Sequoia National Forest and 57,364 acres administered by the Sierra National Forest. The polygon narrative is in the Sierra National Forest section.

Polygon 1380 (Adjacent to Jennie Lakes Wilderness and Sequoia-Kings Canyon Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited in this small polygon due to a paved highway along the west boundary, a road that cherry stems to nearly bisect the middle of the polygon, and a highly developed recreation area. Sights and sounds would likely penetrate throughout this small polygon. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 239 acres.

General Description

Polygon 1380 is a 1,316 acre area that is contiguous with a roadless area, the Jennie Lakes and Sequoia-Kings Canyon Wilderness Areas, and is entirely within the Giant Sequoia National Monument (Map B-57, Sequoia National Forest evaluation map B).

National Vegetation Classification System data indicates 3 percent of the area of the polygon (43 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 3 ecological groups with a total area of 239 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1380 is a mid-elevation mountainous area primarily of mixed conifer vegetation located long the Generals Highway, the main access to Sequoia and Kings Canyon National Parks. The polygon is bordered on the southwest by a major access highway to Sequoia and Kings Canyon National Parks and a highly developed recreation area. The area contains past timber harvest activity and associated roads (closed) and plantations. Unharvested areas provide valuable wildlife habitat and good water quality.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is heavily used by visitors to the 4 adjacent developed campgrounds; noise from adjacent heavily used campgrounds and roads nearby would limit opportunities for solitude or primitive and unconfined recreation. The area does not provide a sense of leaving civilization behind due to the neighboring high recreation use and major highway.

Other Features of Value

There are no unique or high value special resources that contribute to the wilderness characteristics of the area.

Manageability

Cherry stemmed roads, adjacent campgrounds, past timber harvest activity, high visitor use, and signs of civilization from the Generals Highway would make this a difficult area to manage for wilderness character.

Polygon 1381 (Beartrap Meadow – Adjacent to Sequoia-Kings Canyon Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This unit is contiguous with the National Park Service wilderness along one boundary. It has a unique character to it with Stoney Creek and Woodward Creek cascading down through the unit. The area is important for habitat connectivity for the Pacific fisher as well as multiple species of slender salamander. Several Forest Service roads could be converted to trails or decommissioned and the area restored. Opportunities for solitude or primitive and unconfined recreation are limited in the area of busy paved roads and highly developed recreation areas along the east and west boundaries. Sights and sounds would likely penetrate through much of this small polygon. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 237 acres.

General Description

Polygon 1381 is a 1,317 acre area within the Giant Sequoia National Monument (Map B-57, Sequoia National Forest evaluation map B). It is contiguous with the National Park Service wilderness.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (13 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 237 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1381 is a mid-elevation mountainous area; primarily composed of oak conifer and mixed conifer forests. The overall character of the area appears natural due to the exposed granite outcrops, cliffs and streams. Stony Creek and Woodward Creek are prominent features. General's Highway 198 is along the north border, along with a highly developed recreation area.

Approximately one-third of the area had past fuels and timber harvest activities, but the area appears natural for the most part with secondary growth conifer. Developments include the remains of an old pack station at the site of Stony Creek Resort. Developments within the area include high clearance forest system roads open to public use and several roads that are not open to public use. Access roads from previous timber harvest operations are not obtrusive. Immediately adjacent to this unit on the northern edge are several developed recreational facilities along Highway 198, a major highway corridor that provides entry into the adjacent Sequoia and Kings Canyon National Parks.

Opportunities for Solitude or Primitive and Unconfined Recreation

Stony Creek runs through the area, a bedrock granite creek with swimming holes. There is minimal recreational use on the steeper slopes. There are no authorized system trails within the unit, but hiking and mountain biking use occurs during the summer months on old timber roads. This unit is contiguous with the National Park Service wilderness along one boundary.

Highway 198 is a major tourist travel route during the summer months into Sequoia and Kings Canyon National Parks. There are several campgrounds along this road, adjacent to this unit. Traffic noise along the highway corridor limits opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

Stony Creek drainage has bedrock granite creeks and swimming holes. Many historic and prehistoric archaeological sites exist. There are the remains of an old pack station at the Stony Creek Resort site. Historic early 1900s African American Buffalo Soldier military units were known to camp here. The area is important for habitat connectivity for the Pacific fisher as well as multiple species of slender salamander.

Manageability

Easy access from Highway 198 makes manageability challenging. The area currently has apiary special use permits.

Polygon 1384 (Cannell Peak)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Wilderness characteristics of the majority of this area are largely intact. Upslope and on the Kern Plateau, there are opportunities for solitude or primitive and unconfined recreation, even during the peak recreational visitation months in the summer. However, along the western boundary with the Kern River corridor there are high levels of recreational visitation. Opportunities for solitude or primitive and unconfined recreation are extremely limited in the northwest and southwest portions of the polygon due to authorized motorized system routes with pervasive sounds of

motorized use (for instance, the Rincon Motorcycle Trail and the Cannell Meadow National Recreation Trail that is open to mountain bike and off-highway vehicle use) and crowds of recreationists along the river. Military training overflights are also a common occurrence in the southwest portion of the polygon. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise nearly 3,000 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 7,893 acres.

General Description

Polygon 1384 is a 39,629 acre area that extends from the Kern River Canyon up the slopes to the Kern Plateau (Map B-60, Sequoia National Forest evaluation map E). It rises to a maximum elevation of approximately 9,500 feet at Cannell Peak.

National Vegetation Classification System data, based on the polygon size of 39,629 acres, indicates 7 percent of the area of the polygon (2,968 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are inter-mountain basins big sagebrush shrub lands and inter-mountain basins big sagebrush steppe. This polygon also contains 7 ecological groups with a total area of 7,893 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland, Great Basin pinyon-juniper woodland, Mediterranean California mesic mixed conifer forest and woodland and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This north-south trending transitional unit includes the Kern River Canyon and steep brush-shrouded slopes that rise to a plateau composed of open pine stands and large wet grassy meadows. Stands of endemic Piute cypress (only 13 stands known to exist in the Kern River Valley) exist within the unit. There is one hiking trail that accesses Salmon Creek Falls. The northwest area of the polygon includes the Rincon Motorcycle Trail and the high use Packsaddle Limestone Cave geological area. A motorized area in the southwest portion that includes Cannell Meadow National Recreation Trail (open to off-highway vehicles) and access to maintenance to a number and variety of long-standing permitted special uses. Timber removal evidence is faint in the moist and luxuriant forest of the Kern Plateau. Historic mining exploration in the northern quarter of the unit is at least 50 years old, consisting of small attempts to identify tungsten deposits to support World War II steel strengthening efforts. Most exploratory holes are healing over and not noticeable.

The open grassy meadows have been associated with livestock grazing, and there are some troughs and fence lines. There are approximately 10 miles of roads on 5 short spurs that are accessed from Cherry Hill road; they were identified as “not-likely necessary”. Developments associated with special use permits include an aqueduct with access roads, and a hydroelectric impoundment along Salmon Creek.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are extremely limited in areas with authorized motorized system routes in the northwest and southwest portions of the polygon due to pervasive sounds of motorized use (for instance, the Rincon Motorcycle Trail and the Cannell Meadow National Recreation Trail that is open to mountain bike and off-highway vehicle use) and crowds of recreationists along the river. Military training overflights are also a common occurrence in the southwest portion of the polygon. There is a hiking trail to Salmon Creek Falls that offers views of a spectacular water fall during high water years.

Upslope and on the Kern Plateau, there are opportunities for solitude or primitive and unconfined recreation, even during the peak recreational visitation months in the summer. The Kern Plateau is accessed by one main road and use is limited to the summer and fall months, with the exception of groomed snowmobile trail in winter. Recreational users consist of day hikers and backpackers along the trails as well as horse parties, particularly near the open grassy meadows located on the high-elevation plateau. The plateau is well-watered and quite lovely with an incredible diversity of plants and animals that is attractive to hikers and other close-to-the-ground recreational enthusiasts like photographers and painters. Increasingly, there is community interest in building new off highway vehicle routes across and through the Kern Plateau, so there is growing motorized recreational interest in this area.

Other Features of Value

Salmon Creek Falls is a spectacular waterfall during years of high rainfall. The variety of plants and animals in the area is extraordinary as the elevation changes so dramatically from 4,400 feet to 9,500 feet at the top of Cannell Peak. Habitat preservation for a few animals and plants is important in this unit, including the large open wet meadows of the Kern Plateau for several species of salamanders and the mountain yellow-legged frog, and habitat for the Piute cypress.

The unit has a rich archaeological history. It was and is extensively used by the Tubatulabal Tribe to access the plateau from Fay Ranch in the lowlands to the south. It has a rich prehistoric and historic history that belies the fact that it is in almost pristine condition today.

Manageability

Challenges to manageability would include limited opportunities to provide opportunities for solitude or primitive and unconfined recreation and potential for wilderness incursions, based on a high frequency of military overflights; extremely high recreation and vehicle use along the Kern River and Mountain Highway 99 along the western portion of the area; motorized and mountain bike trails, including a motorcycle trail and a National Recreation Trail within the boundary; and the presence of roads immediately adjacent to the area.

Polygon 1385 (Jennie Lakes Roadless – Adjacent to Jennie Lakes Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area is contiguous to the Jennie Lakes and National Park Wildernesses and provides habitat to a number of rare plants and animals as well as mule deer and bear. The steep, forested slopes offer some screening to the recreation activity along paved roads and developed recreation facilities on the boundary and motorized routes within the polygon. However the long, narrow shape bounded by popular recreation routes and multiple developed recreation facilities and

cherry stem roads divide the area and maximize exposure to sounds of motorized use and visitor activity, minimizing opportunities for solitude or primitive and unconfined recreation. There are opportunities for solitude or primitive and unconfined recreation in areas closest to the Jennie Lakes Wilderness boundary, but opportunities are limited in areas with traffic noise along the paved roads, campgrounds, and in areas with authorized motorized routes. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 50 acres.

General Description

Polygon 1385 is a moderately high elevation mountainous area in the Giant Sequoia National Monument and is contiguous with Jennie Lakes Wilderness and national park service wilderness. The 8,216 acre area is formed by Jennie Lakes Wilderness to the south, Big Meadow Road (FS 14S11) to the north, national park service wilderness to the east, and Generals Highway to the west (Map B-57, Sequoia National Forest evaluation map B).

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (49 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 3 ecological groups with a total area of less than 50 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Vegetation is mixed conifer forests interspersed with meadows and streams. The unit rises up toward wilderness, and much of the area is within the Jennie Lakes Inventoried Roadless Area. These areas exhibit natural character with many meadows, granite features, and forests. The composition of plant and animal communities appears to reflect ecological conditions present absent the influence of humans. Vegetation is highly patchy despite infrequency of natural fire, and riparian areas and streams are in good condition despite dispersed camping near trails or roads.

There are cherry stem roads to wilderness trailheads. Generals Highway and Big Meadows Road High and highly developed recreation sites are prominent in the west and north borders. Motorized and mountain biking opportunities are available on multiple objective level 1 roads that are operational level 2 roads. These roads provide popular and valued off-highway vehicle opportunities and are identified on the motor vehicle use map. There are areas with historic logging practices that are noticeable to visitors. Recreational developments along Big Meadows Road include campgrounds, a recreation rental cabin and three trailheads (2 highly developed) and a developed pack station. Highway 198 borders a quarter mile section of the northern boundary and is a busy road in the summer months. Much of the unit is screened from roads and campgrounds by steep topography and trees.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area rises up toward Jennie Lakes Wilderness through the Jennie Lakes Roadless Area. Multiple popular, developed recreation sites line Generals Highway and Big Meadows Road

along the border of the polygon. Big Meadows trail leads to Jennie Lakes Wilderness, a popular destination for hikers and horse riders. Steep rough topography and vegetation shields some of the area from the noise of Highway 198 and Big Meadow Road. There are opportunities for solitude or primitive and unconfined recreation in areas closest to the Jennie Lakes Wilderness boundary, but opportunities are limited in areas with traffic noise along the paved roads and highly developed recreation areas. Motorized and mountain biking opportunities are available on multiple routes. Visitor use is high in these areas. These routes provide popular and valued off-highway vehicle opportunities, including dispersed camping for off-highway vehicle enthusiasts, but limit opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

The area is rich in prehistoric Native American archaeological sites associated with trade trails. Big Meadow and a few viewpoints provide scenic value. Purple mountain parsley, pygmy pussy paws, marten, and northern goshawk are found in the area.

Manageability

The area is easy to access by a transportation system which penetrates deep into the area. The roads and developed recreation facilities along the boundary receive heavy recreational use associated with the adjacent and popular national parks. Highway 198 is the primary travel route into the forest and Sequoia and Kings Canyon National Parks from Visalia. Big Meadows Road with a large number of popular, developed recreation sites is adjacent to the unit. There are high use facilities and objective level 1 roads on the perimeter of this polygon.

Polygon 1387 (North Fork Kern – Adjacent to Golden Trout Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The wilderness characteristics of this area are largely intact. It is contiguous to the Golden Trout Wilderness and Rincon Critical Aquatic Refuge and part is within the Giant Sequoia National Monument as well as Rincon Inventoried Roadless Area. Given the steepness and remoteness of the terrain, it has large areas with no effect from humans.

The one manageability concern is the management of the mines, private lands, trails and communication site.

The polygon provides habitat connectivity and habitat for a number of rare plants and animals. A grove of important Giant Sequoia trees also grows within the unit. The natural fire regime governs the ecosystem and the result is natural processes that provide enhanced habitat opportunities to the rare plants and animals within the unit. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 1,750 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise an additional 21,673 acres.

General Description

Polygon 1387 is an 89,627 acre, mid to high elevation mountainous area that is dissected by the precipitous canyon of North Fork of the Kern Wild and Scenic River. The high point is the 10,000 feet Sherman Peak. The eastern side of the polygon is in the Giant Sequoia National Monument

and it borders the Golden Trout Wilderness to the north (Map B-58, Sequoia National Forest evaluation map C and Map B-59, Sequoia National Forest evaluation map D). This area intersects the Rincon Inventoried Roadless Area, Giant Sequoia National Monument and the Rincon Critical Aquatic Refuge.

National Vegetation Classification System data indicates 2 percent of the area of the polygon (1,751 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins big sagebrush shrub land. This polygon also contains 6 ecological groups with a total area of 21,673 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland, Great Basin pinyon-juniper woodland, Mediterranean California mesic mixed conifer forest and woodland, Mediterranean California mixed oak woodland, and Rocky Mountain aspen forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This is an extremely large unit straddling the North Fork of the Kern River in an area of the river corridor known as the Forks Run. Vegetation transitions from chaparral through oak-conifer to mixed conifers. The eastern side is in the Giant Sequoia National Monument and includes the Freeman Grove and Freeman Creek Botanical Area. The west side has large areas of steep terrain interrupted by rolling terrain with roads and recreation developments along cherry stem roads. Roads, private in holdings, and developed facilities in the west reduce the apparent naturalness. Access roads from previous timber clearing operations are noticeable. The North Fork of the Kern Wild and Scenic River corridor with steep-sided canyon walls is managed as wild and scenic class "wild". It is well insulated from the west side activities, has no developed facilities and extremely limited access even for foot travel and appears primarily affected by the forces of nature.

On the east side of the river and in the area east of the Rincon Trail (33E23) and north of the Schaeffer Trail (33E24 and 33E26) there are several cherry stem motorized routes. There are also a number of short spur roads on the perimeter, with some open to motorized use on the motor vehicle use map, but identified as not likely needed in Travel Management Subpart A. The interior is the most undisturbed section of this unit. This area is also adjacent to the Golden Trout Wilderness, an area that is part of the largest complex of unroaded lands in the Sierra Nevada. This large complex has great ecological diversity due to its wildness, size, and ranges in elevations.

The area south of the Schaeffer Trail and east of the Rincon Trail is a smaller elongated piece that is isolated from the northern portion by a popular motorized and bike trail which creates a highly valued loop recreation opportunity around the perimeter. This southern island is also not contiguous and is removed from the larger wilderness area mentioned above. This area also has more effects associated with modern human occupation and the expansion of the population due to location to Mountain 99, Sherman Pass Road, and other multiple uses.

The whole area has a natural fire regime which has shaped the vegetation. The vegetative community across the unit that now exists would not appear inappropriate to a casual recreational

visitor. Access roads from previous timber clearing operations are not obtrusive. There are 2 active allotments and there is 1 vacant grazing allotment.

To the east, development is concentrated in the southeast close to Sherman Pass Road. A communications site at Sherman Peak has a level 1 road at lower elevation and an unobtrusive access. Tungsten mines are also located in the same area near Sherman Pass Road but are not obvious to casual visitors and represent less than 1 percent of the area. There is no currently known mining activity. While range improvements such as fences, corrals and water troughs occur near some water sources in the area, they are unobtrusive. Several historic guard or mining cabins are present. One storage building (under special use permit), trailheads, campgrounds, and a pack station are located along the edges. An inholding is present at West Meadow along the eastern side. On the east side of the river, all of these developments are along the edges and represent less than 1 percent of the overall area. There are no recreation improvements, ground return telephone lines, electric lines, power lines or other permanently installed linear right-of-way structures. Motorized and hiking trails are present in the area. There are several motorized trails in the polygon, including the Rincon Trail. East of Sherman Peak has a concentration of both authorized and unauthorized user created motorized trails. Much of the recreation in the area other than motorized use is similar to that in the adjacent Golden Trout Wilderness. Large blocks of the unit are unaffected by humans.

The undeveloped quality has been affected by motorized trails and other recreation developments. Fire is a natural part of the ecosystem and shapes vegetation. The area is important for habitat connectivity for the Pacific fisher, several species of slender salamander, mountain yellow-legged frogs and soon to be reintroduced Kern River rainbow trout. Meadows are stable and in fair to good condition. Trout stocking does occur in a few locations. Air quality is fair to good.

Opportunities for Solitude or Primitive and Unconfined Recreation

Given the steepness of the topography, there is minimal recreational use on the steeper slopes providing opportunities for solitude or primitive and unconfined recreation. There is quite a bit of hiking, mountain biking and off highway vehicle use during the summer and holiday weekends on the motorized trails within the Rincon Inventoried Roadless Area and along trails, reducing opportunities for solitude or primitive and unconfined recreation in these areas. Developed recreation facilities, services on the boundaries, and cherry stems include trailheads, campgrounds, a pack station, roads, and organization camps that create an atmosphere minimizing opportunities for primitive and unconfined recreation as well as solitude. Visitor use in the summer, organizational camps, and private inholdings reduce the opportunities for solitude or primitive and unconfined recreation as well as does the heliport along the boundary. In times of active fire suppression activity, the number of helicopters coming and going out of the heliport could be quite disruptive to visitors. Conversely, the inclusion of this unit into the wilderness system would protect the audible qualities of large areas away from these roads. Two small communities and some private property also exist at the edge of the polygon. Potential encounters with other visitors are low throughout most of the polygon. Use is primarily confined to trails within the area, with concentrations of use along roads at the boundaries or cherry stems. There is also outstanding white water opportunities on the Kern River.

Other Features of Value

Outstanding landscape features include waterfalls, pinnacles, granite domes, columnar basalt flows on the Kern River and the Rincon Fault. Native species have connectivity and habitat in the areas away from the impacts of man. These include rare plants, mountain yellow-legged frog,

Kern River rainbows, spotted owl, fisher and goshawk. The Freeman Creek Giant Sequoia grove is a treasure. Bonita Cabin is an historic guard cabin from the early 1900s, located near Bonita Meadow. The Embree Mine possesses 2 cabins and remnants of a mill. The size of the area will allow for its preservation and use in an unimpaired condition.

Manageability

The size of the unit, the number of cherry stemmed and short roads going into the unit, the amount of off-highway vehicle use, and the high volume of visitors traveling Mountain 99 and Sherman Pass Road are challenges to manageability. Lloyd Meadow Road 22S82, which is cherry stemmed into the length of the western side, provides valued access to a variety of developed and dispersed recreation opportunities during the spring, fall and summer recreation season. The extent of the development, road access, and the amount visitor use during the summer recreation season would make the west side very difficult to manage as a wilderness. The Forks of the Kern Trailhead is the access point to the Forks of the Kern, a world class whitewater boating experience. There is no authorized over snow vehicle use in a portion of the polygon. Motorized trails are important to the public. Sherman Pass road provides opportunities for access into the area trails.

In the area east of the Rincon Trail (33E23) and north of the Schaeffer Trail (33E24 and 33E26), the cherry stemmed motorized routes dead end and make this area most feasible for wilderness management. The motorized and mountain biking activities along the perimeter and the southerly, elongated configuration that is not adjacent to the wilderness make the southern area less manageable as wilderness.

Polygon 1390 (Osa Meadows – Adjacent to Golden Trout Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This area is contiguous to the Golden Trout Wilderness. There are motorized use areas. There are good opportunities for solitude or primitive and unconfined recreation in the rugged and remote portions adjacent to designated wilderness. Opportunities for solitude or primitive and unconfined recreation are limited in the eastern portion of the area due to authorized motorized trails and an authorized forest system road that is open to the public (for instance, both are within the boundaries of the polygon), as well as the extensive network of authorized forest system roads near the eastern border area. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 93 acres.

General Description

Polygon 1390 is a 1,100 acre area that is somewhat triangular in shape and contiguous on two sides with the Golden Trout Wilderness (Map B-59, Sequoia National Forest evaluation map D). It is also bordered by the forest boundary and roads.

National Vegetation Classification System data indicates 4 percent of the area of the polygon (49 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains five ecological

groups with a total area of 93 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1390 is a high elevation steep mountainous area primarily composed of red fir and lodgepole pine stands on western facing slopes. There is an authorized motorized trail and an authorized forest system road that is open to the public within the southern portion of the polygon. The 2002 McNally Fire burned through the eastern edge of the unit, in the 55 acre Osa Meadow area, which was followed later that year by flooding and severe downcutting. Across the rest of the polygon, one hundred years of active fire suppression created dense stands of vegetation. Livestock grazing has been absent since 2005.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are good opportunities for solitude or primitive and unconfined recreation in the rugged and remote portions adjacent to designated wilderness. Opportunities for solitude or primitive and unconfined recreation are limited in the eastern portion of the area due to authorized motorized trails and an authorized forest system road that is open to the public (for instance, both are within the boundaries of the polygon), as well as the extensive network of authorized forest system roads near the eastern border area.

Other Features of Value

Osa Meadow is an important montane meadow. This area is important for Native American values and a number of Native American prehistoric archaeological sites are known to exist in the area.

Manageability

Since this polygon is almost entirely enclosed by the adjacent Golden Trout Wilderness, this unit would be easy to manage as an extension of the adjacent wilderness. The Forest Service is implementing the Osa Meadow Restoration Project (Osa Project) for watershed improvement on approximately 19 acres along a portion of Osa Creek in Osa Meadow. Implementation is planned to be completed by summer of 2017.

Polygon 1391 (Monache, Blackrock and South Sierra East)

This polygon overlays the boundary between the Inyo and Sequoia National Forests, with portions in each forest. The polygon was evaluated as one whole unit with each forest's portions together. The polygon narrative is in the Inyo National Forest segment of the evaluation section within Volume 2 of the Draft Environmental Impact Statement for the Revision of the Inyo, Sequoia and Sierra National Forests Land Management Plans (Figure B-10, Inyo National Forest evaluation map I and Figure B-15, Sequoia National Forest evaluation map D).

Polygon 1394 (Domeland/Woodpecker Roadless Area – Adjacent to Domeland Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The polygon is contiguous to the Domelands Wilderness to the east. Despite the extensive inventoried roadless areas, Motorized use is prevalent on authorized forest system roads along the border, including several cherry stem roads, and on authorized motorized routes within the polygon. Several recreation developments are located within the area and private property at Horse Meadow. Opportunities for solitude or primitive and unconfined recreation are limited in areas of the polygon with extensive networks of authorized forest system roads that are open to the public and authorized motorized trails. The polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 6,202 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 4,780 acres.

General Description

Polygon 1394 is a 51,801 acre area with elevations ranging from approximately 2,500 to nearly 10,000 feet on Sirretta Peak. It is located northeast of Kernville and is contiguous with the Domeland Wilderness (Map B-60, Sequoia National Forest evaluation map E and Map B-62, Evaluation Map G) on the eastern border. Much of the unit is in the Woodpecker Inventoried Roadless Area in the north and Domeland Inventoried Roadless Area in the south.

National Vegetation Classification System data indicates 12 percent of the area of the polygon (6,202 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are inter-mountain basins big sagebrush shrub land and inter-mountain basins big sagebrush steppe. This polygon also contains 7 ecological groups with a total area of 4,780 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Great Basin pinyon-juniper woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

General topography of the area is rolling plateau with ridges divided into two areas. The biotic communities in the lower to mid-elevations are composed of various shrubs, forbs, non-native grasses and chaparral. Higher elevations are composed primarily of conifer forests with abundant meadows and mountain streams. A series of meadows is above 8,000 feet, draining into Dark Canyon and Trout Creek. Most meadows appear to be in good condition. The general area has historic ecological sightings and collections of multiple species by Joseph Grinnell, especially at Taylor Meadow. This includes mountain yellow-legged frog. There are occasional sightings of fisher, spotted owl and goshawk. Mid-elevations have been heavily impacted by the historic clear cuts and plantations Upper elevations on the north burned partially during the Manter Fire in 2000 and the McNally Fire in 2002, followed by some salvage logging.

Historic motorized use is prevalent in the north and west of this polygon. This unit is bounded and dissected by an extensive system of cherry stemmed, forest system roads and motorized

routes. Existing mountain biking and motorized opportunities are present within this polygon. Although much of the polygon is in two inventory roadless areas, it is heavily influenced by the extensive system of forest service roads that exist in the interior. The south end of the polygon bordered by the Dome Land Wilderness to the east; forest system trail 34E12 (motorized), forest road 23S07, and forest road 22S12 on the west, Cannell Meadow NR Trail (motorized) on the east. Forest roads 22S12, 24S13, 24S33, and 24S14 are cherry stemmed, and dissect this area of the polygon. The predominant vegetation open conifer woodland with meadows, some shrub land and abundant rock outcrops.

The north end of the polygon contains the Sirretta Trail, a forest system trail open to motorcycles and bounded by the Dome Land Wilderness on the east. The Cannell Meadow Trail lies west of the Sirretta Trail and is also open to motorized use. This area of the polygon also contains forest road 22S19 on the west to Sherman Pass Road, and forest road 22S21 is cherry stemmed. The boundary then proceeds to forest system trail 33E28 (open to motorized use) to Forest Road 22S26 and then to the Dome Land Wilderness boundary. Vegetation treatments occurred in the northern boundary. There are many streams and springs, including Little Trout Creek and Machine Creek, Sirretta Meadow, Sirretta Peak at 9,977 feet elevation. The area is mountainous, high elevation and is predominately conifer forest. Most of the area is in the Woodpecker Inventoried Roadless Area and the Twisselmann Botanical Area.

Developments associated with historic grazing include cabins, fencing and other features to manage livestock. Portions of a historic phone line connecting Lone Pine to Kernville and Lake Isabell still are visible in portions of the area. Remnants of the Cannell Lookout phone line survive to the south of Cannell Trail. Some creeks in the area appear to have California golden and rainbow trout hybrids.

Opportunities for Solitude or Primitive and Unconfined Recreation

Portions of this polygon are adjacent to highly popular recreation areas including dispersed sites, a highway and multiple forest system roads in boundary areas. Several cherry stem roads that dissect the area. There are two areas of authorized motorized trails within the boundaries of this polygon, one in the northern portion and one in the southern portion. The southerly portion of the polygon is in close proximity to Kernville. All roads and motorized trails within and adjacent to the polygon are heavily used by off-highway vehicles, mountain bikers, hiker, and horseback riders; they access wilderness trailheads and other dispersed recreation opportunities, private property, and range allotments. A locally important mountain bike trail is located within the area. The area has several improvements mainly for recreation including undeveloped campsites, corrals, and trailheads along boundary and cherry stemmed roads. Low elevation military overflights are frequent in this area. Opportunities for solitude or primitive and unconfined recreation are limited in areas of the polygon with extensive networks of authorized forest system roads that are open to the public and authorized motorized trails.

Other Features of Value

The Twisselmann Botanical Area is within this area and the public comments indicate that the area has astonishing botanical diversity. A number of interesting vistas of dome lands are possible within the polygon. Numerous historic and prehistoric sites are located within the area. The area also includes the Trout Creek critical aquatic refuge.

Manageability

The area has many entry points to provide easy access during the summer months. However the fairly remote location limits visitors from outside of Kern County. The network of cherry stem roads in the southeast area of the polygon makes management of motorized use difficult. An existing motorized route, the Sirretta Trail, is identified in the mediated settlement agreement of 1990. Motorcycle use was identified as an accepted inconsistency in the area classified as semi-primitive non-motorized until an alternative route was built or a decision not to build an alternative route was made. In either case, the trail would be closed to motorized use. This has not been resolved even though extensive work has been done by planning teams. The northern end of the polygon is surrounded by motorized routes with one cherry stem road reducing the manageability as wilderness. The limited access, light visitor use, and the steep topography facilitate manageability in the central area of the polygon except where the motorized route (Sirretta Trail) dissects the polygon. The multiple meadows and streams in these areas would benefit from wilderness protections.

Polygon 1395 (Clicks Creek – Adjacent to Golden Trout Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads that surround and cherry stem the polygon, nearly bisecting it. Sights and sounds would likely penetrate throughout this small area. Appearance of naturalness is substantially altered by intensive past timber harvest that covers approximately fifty percent of the area. The area is authorized for OSV, limiting opportunities for solitude or primitive and unconfined recreation in the winter. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 92 acres.

General Description

This triangular polygon is 2,285 acres and bisected by a cherry stemmed road providing access to the Summit Trailhead. Approximately 65 percent of the outer boundary is adjacent to the Golden Trout Wilderness and the Moses recommended wilderness. The entire polygon is in the Giant Sequoia National Monument (Map B-58, Sequoia National Forest evaluation map C). The area is relatively flat, headwaters covered in high elevation conifer forest. Elevation is approximately 8,100 feet.

National Vegetation Classification System data indicates only 1 acre consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 3 ecological groups with a total area of 92 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

A cherry stem system road provides access to the Summit Trailhead, splitting the polygon in two. Species composition has been altered significantly by human actions associated with fire suppression and historic timber harvesting. There is light hunting pressure, some invasive plants and past fish stocking of non-natives in streams. Amphibians are not doing well. Connectivity for species dependent on old growth is good.

Although the polygon is not located near developed areas, human manipulations are apparent. Approximately 50 percent of the area was harvested and improvements such as plantations, vegetation management projects, check dams, stream restoration structures and remnant roads for timber harvest affect the apparent naturalness of the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

This polygon is next to open roads. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads that surround and cherry stem the polygon, nearly bisecting it. The area is authorized for OSV, limiting opportunities for solitude or primitive and unconfined recreation in the winter.

Other Features of Value

Perennial streams originate in this polygon and feed the Little Kern River and are habitat for Little Kern golden trout.

Manageability

The Giant Sequoia Management Plan governs management of the entire area and requires protection of objects of interest which may require mechanical treatments. The current condition of the resource would benefit from restoration activities. Many logged areas that may need future restoration making management as wilderness difficult. The area is also popular for over snow vehicle (OSV) use in the winter and wilderness management would displace this use.

Polygon 1397 (South of Jordan Peak – Adjacent to Moses Recommended Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Although the polygon is adjacent to proposed wilderness, the manageability and character is heavily impacted by adjacent residential developments and special uses. Opportunities for solitude or primitive and unconfined recreation are limited due State Highway 190 and an extensive network of authorized forest system roads around the perimeter of this small polygon. Appearance of naturalness is substantially altered by intensive past timber harvest that covers approximately fifty percent of the area. Motorized use is pervasive and sights and sounds likely penetrate throughout this small area. The small size and shape does not allow for any adjustment by reshaping boundaries.

General Description

This elongated, oval polygon is 3,104 acres with an irregular boundary made by several cherry stem roads. Adjacent to the proposed Moses Wilderness at the northern tip however, it shares a

larger boundary with two residential communities, Sequoia Crest and Alpine Village (Map B-58, Sequoia National Forest evaluation map C). The entire polygon is in the Giant Sequoia National Monument. The area is relatively flat, headwaters covered in high elevation conifer forest. Elevation is approximately 8,100 feet.

National Vegetation Classification System data, based on the polygon size of 3,104 acres, indicates 1 acre consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 447 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Two private communities and Highway 190 form the boundary on the west. Fire suppression and past harvest as well as grazing have significantly altered the ecosystem. Streams are somewhat degraded, air quality is often poor due to human uses in the Central Valley, and species composition is altered. Approximately 50 percent of area appears noticeably altered by timber harvest and road building. Species composition has been altered significantly by fire suppression and historic timber harvesting. Connectivity for species dependent on old growth is good. Roads are prevalent on the boundary and several cross the boundary. There is a microwave tower and access road and a log cabin. Jordan Peak Lookout still in operation as a fire lookout, and is an outstanding vertical landmark.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited due State Highway 190 and an extensive network of authorized forest system roads around the perimeter of this small polygon.

Other Features of Value

Jordan Peak Lookout, expected cultural and historic sites, and headwaters of important perennial streams.

Manageability

Most of the elongated boundary is bounded by residential development or roads. Special use permits include grazing, power line easement, potential active tribal uses, 1 special use permit for roads, 4 special use permits for water transmission lines less than 12 inches, 1 special use permit for a passive reflector-broadcasting, and 1 special use permit for amateur radio. Jordan Peak Lookout is still active.

Polygon 1404 (Hatchet Peak)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Altered vegetation density and composition, illegal marijuana cultivation and poor air quality diminish the apparent naturalness. The close proximity to adjacent developed lands, with visual evidence of civilization, diminishes opportunities for solitude or primitive and unconfined recreation. This polygon presents a limited opportunity to protect ecological groups that may be

minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise none of the acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,279 acres.

General Description

The area consists of 6,068 acres and is bordered by the Tule River Indian Reservation to the north, Bureau of Land Management lands and private lands to the west, and National Forest System land to the east (Map B-60, Sequoia National Forest evaluation map E). The area is basically wedge-shaped and primarily a moderate to steep west-facing slope, with a high point at Hatchet Peak at an elevation of 6,385 feet. The entire area lies within the Giant Sequoia National Monument.

National Vegetation Classification System data indicates none of the area of the polygon consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 6 ecological groups with a total area of 2,279 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is primarily a moderate to steep west-facing slope. The vegetation is mixed oak woodland. Fire suppression has altered the density and composition of vegetation. Invasive plant species are present. The area has been a frequent site of illegal marijuana cultivation. Air quality is poor. Developments on the Tule River Indian Reservation, Bureau of Land Management lands and private ranch lands bordering this polygon are apparent. Grazing is generally low and currently limited to areas near open roads adjacent to the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

Use is generally low and currently limited to areas near open roads adjacent to the area. The area is generally free from motorized noise. Opportunities for solitude or primitive and unconfined recreation are good in this area.

Other Features of Value

The area is entirely within the Giant Sequoia National Monument. One historic and five prehistoric sites have been formally recorded. Many more sites, both prehistoric and historic, are expected to be found.

Manageability

The western and northern boundaries of the area are the forest boundaries. The eastern edge is largely bounded by roads. Because of the close proximity to other landownerships (the Tule River Indian Reservation, Bureau of Land Management lands and private ranch lands), fire suppression activities and protection of special uses and private property protection will make management as wilderness difficult. Fuel reduction to protect the objects of interest and tribal lands, as prescribed in the monument management plan, could affect wilderness management.

Polygon 1408 (Upper Kern Canyon Escarpment–Baker Peak)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Although much of this polygon is in an inventoried roadless area, the existing multiple uses on the border and the location away from other wilderness make this area a poor candidate for inclusion. Opportunities for solitude or primitive and unconfined recreation are limited in those portions of the roadless area adjacent to, and within sound distance, of the high use areas. Within the eastern third of the area on east-facing slopes, sights and sounds from adjacent development and activities are apparent. Military training overflights occur frequently in this area.

Opportunities for solitude or primitive and unconfined recreation are limited in this southwestern portion due to the extensive network of authorized motorized trails; a network of authorized forest system roads that are open to the public; and an extensive network of authorized forest system roads on the perimeter, including a couple that cherry stem to form the boundary.

Motorized use is pervasive and sights and sounds likely penetrate throughout these areas. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 1,505 acres.

Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise an additional 15,662 acres.

General Description

Polygon 1408 consists of 48,730 acres and is primarily a steep, east-facing slope on the Upper Kern Canyon Escarpment, with the highest point at Baker Peak at an elevation of 7,926 feet (Map B-60, Sequoia National Forest evaluation map E). The shape of the polygon is long and narrow and at least a few miles wide at its narrowest point. The polygon is not adjacent to any existing wilderness.

National Vegetation Classification System data indicates 3 percent of the area of the polygon (1,505 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins big sagebrush steppe. This polygon also contains 7 ecological groups with a total area of 15,662 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland, Great Basin pinyon-juniper woodland, Mediterranean California mesic mixed conifer forest and woodland, and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The vegetation is predominately shrub land with limited hardwood woodland and conifer hardwood woodland. Good vistas of the Upper Kern River and Kern Plateau exist. Invasive vegetation species are present. The area has adequate chaparral cover to provide contiguous habitat and connectivity for wildlife. It somewhat reflects natural conditions; in the western periphery there is a plantation and a few meadows with large gullies. Most of the polygon is in the Chico Inventoried Roadless Area, including a small portion that is in the Giant Sequoia National Monument. The eastern edge overlaps the North Fork Kern River wild and scenic river corridor, and across the boundary the area is classified as a recreation zone. The corridor is

readily accessible by Mountain Road 99, a heavily traveled road, and has extensive recreation developments and use along the shoreline. There has been some impoundment or diversion in the past. Baker Point Botanical Area is located on the west side of the central portion of the polygon.

Within the western portion of the polygon there are system roads that are open to the public. The Bull Run Trail, (32E39) is motorized and mines are in this unit. Lands adjacent to this area to the west are moderately roaded from past timber harvesting activities. The communities of Kernville, Riverkern, and Wofford Heights are on the southern and southeastern boundaries as is Bureau of Land Management land. Private land adjacent to the area includes residences and businesses. Mountain 99, is a high use road adjacent to and on the opposite side of the North Fork Kern River.

There are utility lines, communications sites, the Baker Point Lookout, and other linear right-of-way structures within the area. Numerous developments and activities occur adjacent to the polygon, particularly along the eastern edge, to the south and somewhat on the western boundary. The sights and sounds would be apparent detracting from the natural quality. Air quality is moderate, influenced by the San Joaquin air basin.

Opportunities for Solitude or Primitive and Unconfined Recreation

The steep character and vegetation type generally limits access to most of the polygon. A large portion of the area is managed as inventoried roadless area, includes a small portion the Giant Sequoia National Monument and the Baker Point Botanical Area. The potential for encounters with other visitors is low in the less accessible areas and high on trails such as the Whiskey Flat Trail, a popular non-motorized trail beginning at the north end of the town of Kernville and travelling north along the Upper Kern River. Numerous developed and undeveloped recreation facilities, which are very heavily used, are adjacent to the eastern boundary of the roadless area, along the Kern River. Private land adjacent to the area includes residences and businesses. Mountain 99 is heavily traveled and adjacent to the Kern River on the opposite side. The Upper Kern River also receives thousands of commercial and private whitewater boating visitors each year, as a world-wide whitewater recreation and fishing destination. Opportunities for solitude or primitive and unconfined recreation are limited in those portions of the roadless area that are adjacent to, and within sound distance, of these high use areas. Within the eastern third of the area on east-facing slopes, sights and sounds from adjacent development and activities would be apparent. Military training overflights occur frequently in this area.

Authorized motorized and non-motorized access is provided in the southwest portion of the polygon by means of a motorcycle trail and multiple spur-like roads that are open to the public. Snowmobile use occurs on groomed snowmobile routes in the winter. Opportunities for solitude or primitive and unconfined recreation are limited in this southwestern portion due to the extensive network of authorized motorized trails; a network of authorized forest system roads that are open to the public; and an extensive network of authorized forest system roads on the perimeter, including a couple that cherry stem to form the boundary. Motorized use is pervasive and sights and sounds likely penetrate throughout these areas.

Other Features of Value

Rare plants occur, such as the Shirley Meadows star tulip and Piute cypress, and the Baker Point Botanical Area is located here. Deep Creek Cave is on the western edge. The area features good vistas of the Upper Kern River and Kern Plateau. Numerous historic and prehistoric sites exist.

The North Fork Kern Wild and Scenic River lies along the eastern boundary of the area, and the area overlaps the wild and scenic river corridor.

Manageability

Generally, this area is a large tract of relatively undeveloped land, with mostly low potential for further development due to lack of access, topography and brush. Eighty percent of the area has very limited access. The shape is long and narrow, but due to its size, it is still a few miles wide at its narrowest point. Utility lines and other linear right-of-way structures exist within the polygon. A communication site is located at Baker Point, where the potential exists to add more improvements. Four active lode mining claims are in the area. Motorized and mechanized use on existing Forest Service system trails would have to be eliminated. These users would be displaced, and some incursion could occur. Off highway vehicle use is concentrated in the southwest part of the area, with the intent to retain those trails in that area. The eastern edge overlaps the North Fork of the Kern wild and scenic river corridor. This section of river is managed as a recreation zone and receives very high levels of use, both on the land adjacent to the river as well as on the river itself.

Numerous developments and activities occur adjacent to the area, some immediately adjacent, particularly along the eastern edge and to the south. Mountain 99, which is heavily traveled, is adjacent to the opposite side of the Kern River. Numerous developed and undeveloped day use and overnight recreation facilities, which are very heavily used, are adjacent to the eastern boundary of the area, along the Kern River. Private land adjacent to the area includes residences and businesses. The communities of Riverkern, Kernville and Wofford Heights are adjacent to the area. Additional development is likely in Kernville and Wofford Heights, which could result in new demands on this area for utility and recreation infrastructure and to conduct fuels reduction.

Polygon 1410 (Deerwood Meadow)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area is bound by a major paved arterial road on the north (Sherman Pass Road) and another paved road (Cherry Hill Road) on the west that provides access to private property (Horse Meadow). Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails, paved roads, and an extensive network of authorized forest system roads around the perimeter of this polygon, including a road that cherry stems to partially dissect the area. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,054 acres.

General Description

Polygon 1410 comprises 8,494 acres of land shaped somewhat like an ear. Elevations range from approximately 6,000 to 9,600 feet. It is adjacent to the Rincon Inventoried Roadless Area on the north, Cannell Inventoried Roadless Area on the south and Woodpecker Inventoried Roadless Area on the east (Map B-59, Sequoia National Forest evaluation map D and Map B-60, Evaluation Map E).

National Vegetation Classification System data indicates 2 percent of the area of the polygon (181 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 5 ecological groups with a total area of 1,054 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

General topography of the area is steep and rocky with some areas of bedrock-defined channels. There are some fisher, goshawk and spotted owl detections. There are some slender salamanders and several sensitive plants within the area. The polygon is bordered by Cherry Hill Road on the west, Sherman Pass Road on the north and a single track motorcycle trail on the east. There are several roads within the polygon that are open to motorized use. Lower and mid elevations were severely burned during the McNally Fire in 2002, leaving montane shrub with scattered burned trees and isolated islands of forest. Higher elevations have some areas of intact forest. Alders and other riparian vegetation along Brush Creek and Alder Creek burned during the McNally Fire, but are recovering. The only development within the polygon is livestock infrastructure, a few system roads, trails and minor check dams at Poison Meadow and Mosquito Meadow. There are some undeveloped campsites at the end of the cherry stem roads within the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is very lightly visited, mainly by hunters in the fall and persons accessing dispersed and developed campgrounds, such as the Horse Meadow Campground. The area is visited by cattle permittees in the course of managing their livestock and livestock infrastructure. There are high signs of development and use on its boundaries. Opportunities for solitude or primitive and unconfined recreation are limited due authorized motorized trails, paved roads, and an extensive network of authorized forest system roads around the perimeter of this polygon, including a road that cherry stems to partially dissect the area. Extensive plantations alter the appearance of naturalness, treatments are planned that require motorized access and motorized tools.

Other Features of Value

There are some fisher, goshawk and spotted owl detections. There are some slender salamanders and several sensitive plants within the area. The area is within the watershed of existing and potential wild and scenic rivers. Brush Creek has been proposed for consideration by the public.

Manageability

There are several roads within the polygon that are open to motorized use. Limited access and due to steep terrain would make manageability difficult.

Polygon 1420 (Lumreau Creek)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area is used primarily for hunting and grazing, with very light recreational use. There is substantial departure from appearance of naturalness due to extensive plantations throughout this polygon. The appearance of naturalness is affected along eight miles of a double bulldozer line

created during fire suppression activities in 2014. Opportunities for solitude or primitive and unconfined recreation are limited in areas near the perimeter due to an extensive network of authorized forest system roads, including two cherry stem roads. Sights and sounds associated with motorized likely penetrate a large portion of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,565 acres.

General Description

Polygon 1420 comprises of 6,983 acres of land shaped like a tadpole. Elevations range from approximately 4,500 to 6,500 feet. It is not contiguous with wilderness areas. It is adjacent to the Greenhorn Creek Inventoried Roadless Area to the southwest (Map B-60, Sequoia National Forest evaluation map E and Map B-61, Sequoia National Forest evaluation map F).

National Vegetation Classification System data indicates less than 1 percent of the polygon (9 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 7 ecological groups with a total area of 2,565 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are Mediterranean California mixed oak woodland and Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

General topography of the area is steep with deep canyons. The mountainous area consists primarily of oak woodland, chaparral and non-native annual grasses, with conifer plantations in the highest elevations. Twenty five percent of the area burned in the north during the Red Mountain Fire in 1970, and another area burned in the south during the Ranch Fire in 2014. There are extensive noticeable dozer lines within the Ranch Fire area. The boundaries of the area include extensive cherry stem roads with undeveloped campsites. The unit has authorized forest system motorized off-highway vehicle trails that are open to public use; and non-authorized motorized trails that are user created. Some roads open to high clearance vehicles are mixed use areas. Grazing occurs in the area with allotment fencing and some structures at the Old Likely Mill site. The area has feral pigs.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is highly visited by recreationists, especially in the development around the borders. The area within the polygon is popular for hunting in the fall. The area and border have roads open to off-highway vehicle recreation on the north, east and south and several motorized trails on the southeast. The traffic noise from the use of roads and motorized trails within the area limits opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

There is the unique or high value Old Likely Mill site within the polygon. Historic condor roost sites present. There are numerous documented prehistoric sites.

Manageability

Limited access and due to steep and deep canyons would make manageability difficult. Two large cherry stem roads project into the southern portion of the unit, giving it an odd serpentine shape.

Polygon 1422 (Woodward Peak)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The wilderness characteristics of this area have been significantly compromised by the prevalence of motorized use and significant historic and current mining activities. Opportunities for solitude or primitive and unconfined recreation are limited due to the extensive network of authorized motorized trails within the polygon. Sights and sounds associated with motorized use likely penetrate the entire polygon. There are active mining claims within this polygon, with permitted motorized road access for maintenance and motorized maintenance activities. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,139 acres.

General Description

Polygon 1422 is an 8,008 acre area to the west of Lake Isabella and north of the Lower Kern River (Map B-61, Sequoia National Forest evaluation map F).

National Vegetation Classification System data indicates 8 percent of the area of the polygon (411 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 7 ecological groups with a total area of 2,139 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1422 is a low to mid-elevation mountainous area, primarily of shrub and oak woodland, with conifers at higher elevations. There are many vista points overlooking Lake Isabella and its surrounding recreation developments and communities. The area is bounded on the west by Rancheria Road (FS25S15); on the north by FS26S03, which connects to Sawmill Road (County Road 128); on the east by private and BLM lands; and on the south by FS 26S06. It is a popular off-highway vehicle use area. Plant composition has been moderately altered. Large, intense and stand-replacing fires aided the introduction and establishment of annual grasses throughout the area. Invasive plant species are also found along roads. Hazardous waste and trash from illegal marijuana gardens have littered the area.

Portions of the area have substantially noticeable alterations to the landscape and permanent improvements, most no longer used or maintained, associated with historic mining. There are 4 active placer mining claims throughout T.26, R.31, in Section 36. There are 15 active placer mining claims throughout T.27, R.32, in Section 4. Developments are mainly vertical and horizontal mining shafts. The analysis area overlaps the Greenhorn Mining District and possibly

the western edge of the Keys Mining District. Both districts are associated with the discovery of gold in the southern Sierra in 1854, and with the early settlements of Petersburg near the crest of the Greenhorn Mountains, and Keysville near the Kern River. Named mines located within the area include the Lone Star, Deep Gold and Mayflower. The southern edge of the area is located within the northern fringe of a historic mining landscape associated with Greenhorn Creek and numerous mining features, and associated infrastructure such as ditches, cabins and mill sites.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunity for solitude or primitive and unconfined recreation are limited by the presence of developed campgrounds, roads and motorized trails within the analysis area. These trails and roads are easily accessed from the communities surrounding Lake Isabella. The unit is crisscrossed with system trails with connectors of user defined (unauthorized) trails.

Other Features of Value

Numerous prehistoric and historic sites are located in the area. As noted earlier, the area overlaps the Greenhorn Mining District. Landscape-level placer mining sites from the 19th century overlap the area along Greenhorn Creek. Brown's Mill is in the eastern portion and is the site of a 1870s sawmill associated with the Cove Mining District and the growth of early Kernville. Traces of historic logging roads and other infrastructure are present in many portions of area.

Manageability

The biggest manageability concern is the presence of numerous roads and motorized use. The sights and sounds from human activity adjacent to the analysis area affect the wilderness character in terms of solitude and primitive and unconfined recreation.

Polygon 1425 (Delonegha Creek)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The wilderness characteristics of this area have been significantly compromised by the prevalence of motorized roads and trails, and their associated uses, as well as by significant mining history. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the polygon, and Highway 178 along the southern boundary. Motorized use is pervasive and sights and sounds from roads would likely penetrate throughout much of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 4,413 acres.

General Description

Polygon 1425 is a 14,675 acre area along the western portion of the Lower Kern River (Map B-61, Sequoia National Forest evaluation map F). It is outside the Giant Sequoia National Monument.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (213 acres) consists of ecological groups that have less than 5 percent of their national extent protected

in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 4,413 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1425 is a mid-elevation mountainous area composed of oak woodland and brush. Plant composition has been moderately altered. Thirty-percent of the area was harvested, the rest has been altered by 100 years of fire suppression. Large, intense and stand-replacing fires have aided the introduction and establishment of annual grasses in all parts of the analysis area. Invasive plant species also occur along roads and trails. Hazardous waste and trash from illegal marijuana gardens have littered the area. It is bordered by State Highway 178, which provides access into Lake Isabella, Kernville and other areas within the Sequoia National Forest. The entire unit is crisscrossed with authorized forest system motorized trails with connectors of user defined (unauthorized) trails. The north east corner has one system road open to the public that is within the boundary of the polygon. High use developed recreation facilities occur all along the Kern River Corridor, immediately adjacent to the western boundary of the polygon. A hydroelectric project also occurs in this area of the polygon.

There are 9 active lode mining claims and 22 active placer mining claims throughout T. 27, R. 32, Sections 3, 10, 11 and 19. There are 3 active lode mining claims and 55 active placer mining claims throughout T. 27, R. 31, Sections 1, 11, 12, 13, 16, 24, 26, 33 and 34. Development is largely limited to mining shafts, both vertical and horizontal. The polygon overlaps the Greenhorn and Keys Mining Districts. Both districts are associated with the discovery of gold in the southern Sierra in 1854 and with the early settlements of Petersburg near the crest of the Greenhorn Mountains, and Keysville. There are numerous mining sites and infrastructure that includes ditches, mill sites, cabins, foundations and dumps.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude and unconfined recreation are limited by the presence of motorized use on roads and trails within the analysis area. It is also influenced by the sights and sounds of noticeable activity both by recreational visitors and by activities taking place at the hydroelectric project and developed sites that are adjacent to the analysis area along the Kern River. The existence and use of these facilities would substantially impact opportunities for solitude within the portions of the area that are near these adjacent facilities.

Other Features of Value

Numerous prehistoric and historic sites are located in the area. As noted earlier, the area overlaps the Greenhorn Mining District. Landscape-level placer mining sites from the 19th century overlap the area along Greenhorn Creek. Brown's Mill, site of a 1870s sawmill associated with the Cove Mining District and the growth of early Kernville, is located on the eastern side of the area. Traces of historic logging roads and other infrastructure are present in many portions of area.

The area contains a number of rare and important plants and animals such as goshawk, Pacific fisher, spotted owl, Hall's daisy, Giant Sequoia groves, several species of slender salamander and possibly Congdon's lewisia. The area is important for habitat connectivity for the Pacific fisher. Some non-native fish may exist.

Manageability

The biggest manageability concern is the extensive network of authorized motorized trails and mining operations. The sights and sounds from human activity adjacent to the analysis area affect the wilderness character in terms of solitude and primitive and unconfined recreation.

Polygon 1426 (Adjacent to Bright Star Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Three designated special interest areas testify to the unique natural resources of the area. However, motorized trails and roads and significant and substantially noticeable mining impacts have a significant impact on wilderness characteristics in much of the unit. Motorized access to this area is needed to maintain CERCLA sites. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the polygon; sights and sounds from roads would likely penetrate through large portions of the polygon. This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 3,407 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise an additional 12,881 acres.

General Description

Polygon 1426 is a 49,918 acre area located in the Piute Mountains on the far southern edge of the Sequoia National Forest. The analysis area is contiguous to the Bright Star Wilderness (Bureau of Land Management) (Map B-62, Sequoia National Forest evaluation map G). The unit consists of four different bioregions: the Sierra Nevada, Transverse Range, Mojave Desert and Central Valley.

National Vegetation Classification System data indicates 7 percent of the area of the polygon (3,407 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are inter-mountain basins big sagebrush shrub land and inter-mountain basins big sagebrush steppe. This polygon also contains 7 ecological groups with a total area of 12,881 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland, Great Basin pinyon-juniper woodland, and Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1426 is a mid-elevation mountainous area composed primarily of conifer forest in higher elevations and oak woodland and brush at lower elevations. The entire unit is crisscrossed with authorized motorized trails and has some system roads open to public use. Thirty-percent of the area has been timber harvest. Some non-native fish may exist. This area has appeal for dirt bike enthusiasts, and off-highway vehicle recreation. The area was heavily occupied during the Gold Rush, and cabins and mines abound in the area. Superfund repositories are located at the north end of Alaska Flat, on Erskine Creek and at French Meadow.

Opportunities for Solitude or Primitive and Unconfined Recreation

The opportunities for solitude or primitive and unconfined recreation are limited by the presence of motorized use. There are multiple authorized motorcycle routes and roads allowing use by all vehicles. There are also numerous unauthorized user-created routes. Motorized and mountain biking enthusiasts are very interested in keeping and expanding recreation opportunities in this area.

Other Features of Value

The area offers unique opportunities to study rapid evolution and ecosystem development. There are a number of rare and important plants and animals such as goshawk, spotted owl, Hall's daisy, and several species of slender salamander. Congdon's lewisia may be present. The area is important habitat connectivity for the Pacific fisher. The area includes Long Canyon Research Natural Area, Inspiration Point Inventoried Roadless Area and Bodfish Piute Cypress Botanical Area. Rare Piute and Bodfish cypress trees have extremely limited ranges.

Manageability

The ability of the agency to resolve resource issues related to mining impacts, in particular Superfund (Comprehensive Environmental Response, Compensation, and Liability Act or CERCLA) sites would make manageability difficult. Superfund repositories are located at the north end of Alaska Flat, on Erskine Creek and at French Meadow. To address environmental risks from hazardous mining waste, these sites could require vehicle access and operation of heavy equipment. The repository for the Bright Star mine requires regular maintenance to stabilize. These activities could include the operation of heavy equipment and require vehicle access. The French Meadow repository is new and may need additional work in the future to stabilize. CERCLA work is proposed at the Jeannette-Grant mine where arsenic-laden tailings are being eroded by Erskine Creek (which runs down into the community of Lake Isabella). Outside of the environmental hazard, repositories have the potential to impact visual and auditory qualities. Repositories are also sterile and do not regenerate vegetation.

The off highway vehicle community is concerned about losing access and motorized opportunities in the Piute Mountains and is actively engaged in promoting the additions of many user-created routes to the existing travel management system. These motorized use recreation advocates volunteer many thousands of hours to maintain trails, and have created a destination motorized trail system that attracts expert riders from many states and other countries.

Motorized use in the semi-primitive non-motorized area of the Piutes is discussed in the mediated settlement agreement 1990 and allows for one motorized trail in the interim and until an environmental analysis is completed.

Polygon 1427 (Clear Creek, Paiute Mountains)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The apparent naturalness within this area is affected by the existence of motorized use, evidence of past timber harvesting, evidence of past mining activities and illegal marijuana gardens. Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trail that bisects the polygon; sights and sounds from motorized use would likely penetrate the polygon. There are authorized restoration treatments in the southern and eastern

portions of the polygon. Industrial mining material activity within the polygon has potential for some hazmat related issues that would require motorized access and motorized tool activity. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,383 acres.

General Description

Polygon 1427 is a 6,747 acre area located in the Piute Mountains on the southern edge of the Sequoia National Forest outside the Giant Sequoia National Monument (Map B-61, Sequoia National Forest evaluation map F and Map B-62, Sequoia National Forest evaluation map G).

National Vegetation Classification System data indicates 5 percent of the area of the polygon (319 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 6 ecological groups with a total area of 1,383 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Polygon 1427 is a mid-elevation mountainous area composed primarily of oak woodland and brush in lower elevations and conifer forest in higher elevations. Hydrologic conditions are steep bedrock-defined streams that are mostly intermittent. The area has one existing motorcycle trail (33E45) dissecting the area. There are signs of past timber harvesting, evidence of past mining activities and illegal marijuana gardens. Significant soil erosion due to flash flooding and debris flows following fire. Non-native grasses are present and their populations considered stable and not increasing.

The area was heavily occupied during the Gold Rush and cabin and mines abound in the area. There are 9 active lode mining claims and 22 active placer mining claims throughout T. 27, R. 32, in sections 3, 10, 11 and 19. There are 3 active lode mining claims and 55 active placer mining claims throughout T. 27, R. 31, sections 1, 11, 12, 13, 16, 24, 26, 33 and 34. The area is located within the Valley View Mining District. The Valley View Mining District was discovered in the 1870s and active into the 1940s. Mining machinery associated with the Valley View Mine is located on Clear Creek below the mine. The mine is located on private property. Near the head of Clear Creek is Burton Mill, site of a stamp mill.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunity for solitude or primitive and unconfined recreation is limited by the presence of human activity. The sights and sounds of recreation activity, mainly off highway vehicle use, and the sights and sounds of activities taking place on lands adjacent to the analysis area are noticeable. The volume of traffic on Saddle Springs Road and off-highway vehicle areas is very high.

Other Features of Value

There are no other features of value documented.

Manageability

Roaded access is provided to private inholdings, utility corridors and off-highway vehicle trails within the polygon. Existing system trails were designated in the travel management decision. Industrial mining material activity within the polygon has potential for some hazmat related issues that would require motorized access and motorized tool activity. There are active authorized restoration treatments in the southern and eastern portions of the polygon.

Polygon 1429 (Pierce Valley – Adjacent to Sequoia-Kings Canyon Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area appears natural with mixed conifer forested areas. It is contiguous to the National Park wilderness and private property. Opportunities for solitude or primitive and unconfined recreation is limited by off-highway vehicle activity within the unit, and State Road 469 and Eshom campground on the boundary. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 922 acres.

General Description

Polygon 1429 is a 2,729 acre area located in the Giant Sequoia National Monument, adjacent to National Park Service wilderness (Map B-56, Sequoia National Forest evaluation map A and Map B-57, evaluation map B).

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon (3 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 922 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This is a mid-elevation mountainous area composed primarily of mixed conifer forests interspersed with granite outcrops, meadows and streams. Plant and animal communities are mostly intact and representative of the area. Giant sequoias, spotted owls, fisher and goshawks are present in unit. Streams, meadows, and riparian areas are beautiful and most are in good to excellent condition. There are adjacent recreational developments (for example, Eshom Campground) along the northern edge of the unit but are screened by trees and topography. Bullfrogs are present at Pierce Pond. Pierce Valley Road and Forest Service Road 15S01 border the edge of the unit and receive moderate traffic, except during holidays when traffic is heavy. County Road 469 is about one quarter of a mile from the border.

This is a very popular off-highway vehicle area with a new staging area in the planning phase, which will be located near the boundary. Developments within the area include several authorized forest system roads that are open to the public, a fence and corral at Pierce Valley and Evans Meadow, and an earthen dam at Pierce Pond. Access roads from previous timber management are

unobtrusive. Fuels and timber harvest treatments have occurred across approximately 50 percent of the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

Rising topography and forested slopes provide screening. Visitor use is concentrated in off-highway vehicle use areas and in lower elevations near Eshom Campground on the northern boundary. Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails within this small polygon, and along the southern border with State Road 469. Sights and sounds from motorized use likely penetrate much of the polygon. This area is popular for off-highway vehicle activities and a new staging area is in the planning phase with a State funded off-highway vehicle grant.

Other Features of Value

Access to the Redwood Mountains, giant sequoia, views and meadows add scenic value. The area is rich in prehistoric Native American archaeological sites associated with trade trails. Giant sequoias, spotted owls, fisher and goshawks are present in unit.

Manageability

This area is popular for off-highway vehicle activities and a new staging area is in the planning phase with a State funded off-highway vehicle grant. Established use patterns would make management as wilderness problematic. A spotted owl protected activity center is at Cherry Point.

Polygon 1431 (Woodpecker Roadless – Adjacent to Domeland Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area is adjacent to the Domeland Wilderness, contains 1,403 acres of the Woodpecker Inventoried Roadless Area, and encompasses the Bald Mountain Botanical Area. There are opportunities for solitude or primitive and unconfined recreation in much of the area. A special use permit is issued to Edwards Air Force Base for their pilot wilderness survival training, which occurs approximately five times per year and attests to the area's wilderness character.

Opportunities for solitude or primitive and unconfined recreation are limited in areas with authorized motorized use, including areas with authorized motorized trails and where authorized forest system roads are open to the public. These areas are also bordered by paved roads and an extensive network of authorized forest system roads. Sights and sounds from pervasive motorized use likely penetrate throughout much of the polygon.

This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 510 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 468 acres.

General Description

Polygon 1431 is a 7,234 acre area located directly north of Domeland Wilderness (Map B-59, Sequoia National Forest evaluation map D). It contains 1,403 acres of the Woodpecker Inventoried Roadless Area.

National Vegetation Classification System data indicates 7 percent of the area of the polygon (510 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 44 ecological groups with a total area of 468 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This is a mid-to-high elevation mountainous area composed of brush and annual grasses in lower elevations, graduating to Sierran mixed conifer in higher elevations. Several meadow and riparian areas (critical aquatic refuges) are located within the polygon in differing stages of health, ranging from poor to good condition. The area includes a majority of the Bald Mountain Botanical Area that provides habitat for numerous rare plant species. Some areas of this unit contain clear-cuts, roads, off-highway vehicle trails, plantations and other developments. A portion of this area is managed as inventoried roadless area. There are some past timber harvest areas. The unit was burned as part of a backfire for the McNally Fire in 2002, with varying intensity and effects. Intensive sheep and cattle grazing occurred from the 1860s to the mid-1900s. Grazing impacts are moderate in the area (Fish Creek allotment); most of the area has limited forage value. Grazing associated developments within the area include water troughs, fence lines and corrals.

Opportunities for Solitude or Primitive and Unconfined Recreation

Most of the area is remote, with limited access and little visitation; development and signage is scarce. There are opportunities for solitude or primitive and unconfined recreation in this area. A special use permit is issued to Edwards Air Force Base for their pilot wilderness survival training occurs approximately five times per year and attests to the area's wilderness character.

A portion of the polygon has extensive motorized use. Beach Ridge and Mahogany motorcycle trails are in the polygon, and Sherman Pass Road and other motorcycle trails are adjacent to the polygon to the east. There are multiple authorized forest system roads in the unit that open to the public. Opportunities for solitude or primitive and unconfined recreation in motorized areas are limited, including in areas within the polygon with authorized motorized trails and where authorized forest system roads that is open to the public. Opportunities are also limited due to paved roads and an extensive network of authorized forest system roads around the perimeter of these areas. Sights and sounds from pervasive motorized use likely penetrate throughout much of the polygon.

Other Features of Value

The Bald Mountain Botanical Area and Fish Creek Canyon, with interesting geologic features (basalt caps), provide a very unique and high value special resource. Forest Service sensitive species include Pacific fisher, slender salamanders, and historic detections of willow flycatcher. The area is separated from the South Sierra Wilderness to the north east by only the Sherman Pass Road.

Manageability

Limited access, location to other wilderness, and the remote location facilitates manageability as wilderness. The special use permit issued to Edwards Air Force Base for their pilot wilderness survival training could be problematic. Multiple system roads and motor vehicle trails in the unit

are open to public. The area is currently in the old forest emphasis area and Southern Sierra fisher conservation area.

Polygon 1432 (Blackrock Mountain – Adjacent to Golden Trout Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Although the area is adjacent to the Golden Trout Wilderness, the presence of roads detracts from the naturalness of the area and its potential suitability for inclusion in the National Wilderness Preservation System. Most recreation use occurs on the motorized trail and the existing system road that cherry stems the area. Opportunities for solitude or primitive and unconfined recreation are limited due to the authorized motorized trail within this small polygon, and an authorized forest system road that nearly bisects the small polygon. Sights and sounds motorized use likely penetrates throughout much of the area.

This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 30 acres.

General Description

Polygon 1432 is a 1,133-acre area is located directly south of the Golden Trout Wilderness (Map B-59, Sequoia National Forest evaluation map D). National Vegetation Classification System data indicates 1 acre consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 3 ecological groups with a total area of 30 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This is a high elevation mountainous area primarily composed of Sierran mixed conifer with a scattering of shrubs and herbaceous grasses. There are several riparian areas and are in good condition. The area provides suitable habitat for several forest service sensitive species including the marten and slender salamanders. The overall character of the area appears natural. Roads border the unit except where the parcel abuts designated wilderness. A cherry stem road nearly divides the polygon into two sections. Within this polygon, there are authorized motorized trails and authorized system roads that are open to the public. The area is actively grazed but has limited forage value. The only developments within the area are livestock structures.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is visited by recreationists who use one motorized trail (Blackrock Mountain) that is within the polygon and multiple roads on the perimeter, including the one the cherry stem road that nearly bisects the polygon. There is one trail designed for pack and saddle use (Beach Meadow). The presence and use of motorized vehicles on roads and one motorized trail would limit opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

The polygon contains a contiguous area of red fir forest that provides a high value special resource that contributes to the wilderness character of the area.

Manageability

Motorized activity adds challenges to the ability of the agency to manage the area as wilderness especially in this remote location, which is close to an extensive system of popular motorized routes. Enforcement would be difficult.

Polygon 1434 (Agnew Roadless – Adjacent to Monarch Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This area is contiguous with Monarch Wilderness, Kings River Special Management Area, and is within the Giant Sequoia National Monument and the Agnew Inventoried Roadless Area. It has steep terrain and no mining, authorized trails or grazing but does have a forest system road that is open to public use. It provides habitat to a number of rare plants and animals including goshawk, Pacific fisher, spotted owl, Hall's daisy and possibly Congdon's lewisia. Opportunities for solitude or primitive and unconfined recreation are limited in this polygon due to an open forest system road in the polygon and heavy traffic roads bordering three sides of this small area, including Highway 180, Ten Mile Road, and authorized forest system roads. There is a permitted water ditch in the polygon with associated water rights to an adjacent private property owner; the easement was awarded through court order. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,101 acres.

General Description

Polygon 1434 is a 3,726 acre area that is contiguous with the Monarch Wilderness and the King River Special Management Area (Map B-56, Sequoia National Forest evaluation map A). It is within the Agnew Inventoried Roadless Area and the Giant Sequoia National Monument and contains Giant Sequoia groves.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (26 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 6 ecological groups with a total area of 1,101 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups, however, comprises less than 1,000 acres in this polygon.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This is a mid-elevation mountainous area primarily composed of oak woodland and brush. Higher elevations within the unit are blanketed with stands of old and secondary growth pine. It is located along the southern edge of the Kings River Special Management Area, and bordered by

Highway 180, which provides access into Kings Canyon National Park. Scenic overlook pullouts along Highway 180, such as Yucca Point, provide panoramic vistas of the polygon.

Vegetation appears to be altered in some areas from timber harvest activities, and in most areas from fire suppression that increased vegetation density and altered species composition. Immediately adjacent to this unit are several highly developed recreational facilities along Highway 180, a major highway corridor that provides entry into the adjacent Kings Canyon National Park, as well as a Forest Service heliport. The only developments within the area are several forest system roads in the south half of the unit and a water pipe with associated water rights that is permitted to an adjacent private property parcel at Kings Canyon Lodge. The appearance of the small diameter pipe is not obtrusive. There are no grazing, mining or administrative facilities within the polygon. Motorized use is limited to a level 2 road that has been identified as not needed. Non-native fish may exist.

Opportunities for Solitude or Primitive and Unconfined Recreation

Given the rugged topography there is minimal recreational use on the steeper slopes. There are no National Forest System trails within the unit, but hiking and mountain biking use is popular during the summer months on the old timber roads. At Ten Mile Creek there is a heavily used user-created trail in the vicinity of the permitted water pipe. Highway 180 is a major tourist travel route during the summer months into Kings Canyon National Park. Wilderness vistas are interpreted through signage at car pullouts on the adjacent Highway 180 and the Yucca Point vista point provides a panoramic view of the entire polygon and adjacent Monarch Wilderness.

There are several major recreational facilities adjacent to this unit, such as the Kings Canyon Lodge. Sounds from traffic congregations of people along the highway corridor create are pervasive. Additionally, there is a heliport along the boundary of the unit. In times of active fire suppression, the number of helicopters coming and going out of the heliport is pervasive. Opportunities for solitude or primitive and unconfined recreation are limited due to roads bordering three sides of this small polygon, including Highway 180, Ten Mile Road, and authorized forest system roads. There is a permitted water ditch in the polygon with associated water rights to an adjacent private property owner; the easement was awarded through court order. The inclusion of this unit into the wilderness system might protect the audible qualities of wilderness in the adjacent Monarch Wilderness and halt further development along the existing boundaries, but would not provide the opportunity within the unit itself.

Other Features of Value

The area contains rare plants and animals such as goshawk, Pacific fisher, spotted owl, Hall's daisy, Giant Sequoia groves, several species of slender salamander and possibly Congdon's lewisia. The area is important for habitat connectivity for the Pacific fisher as well as multiple species of slender salamander.

Historic redwood logging sites and features such as the Ten Mile Creek Flume provide insight into forest management practices in a past pioneering era. The sheer size of the trees and the work to render them into usable forest products with primitive logging tools is a story of adventure, risk and the evolution of land management practices through time.

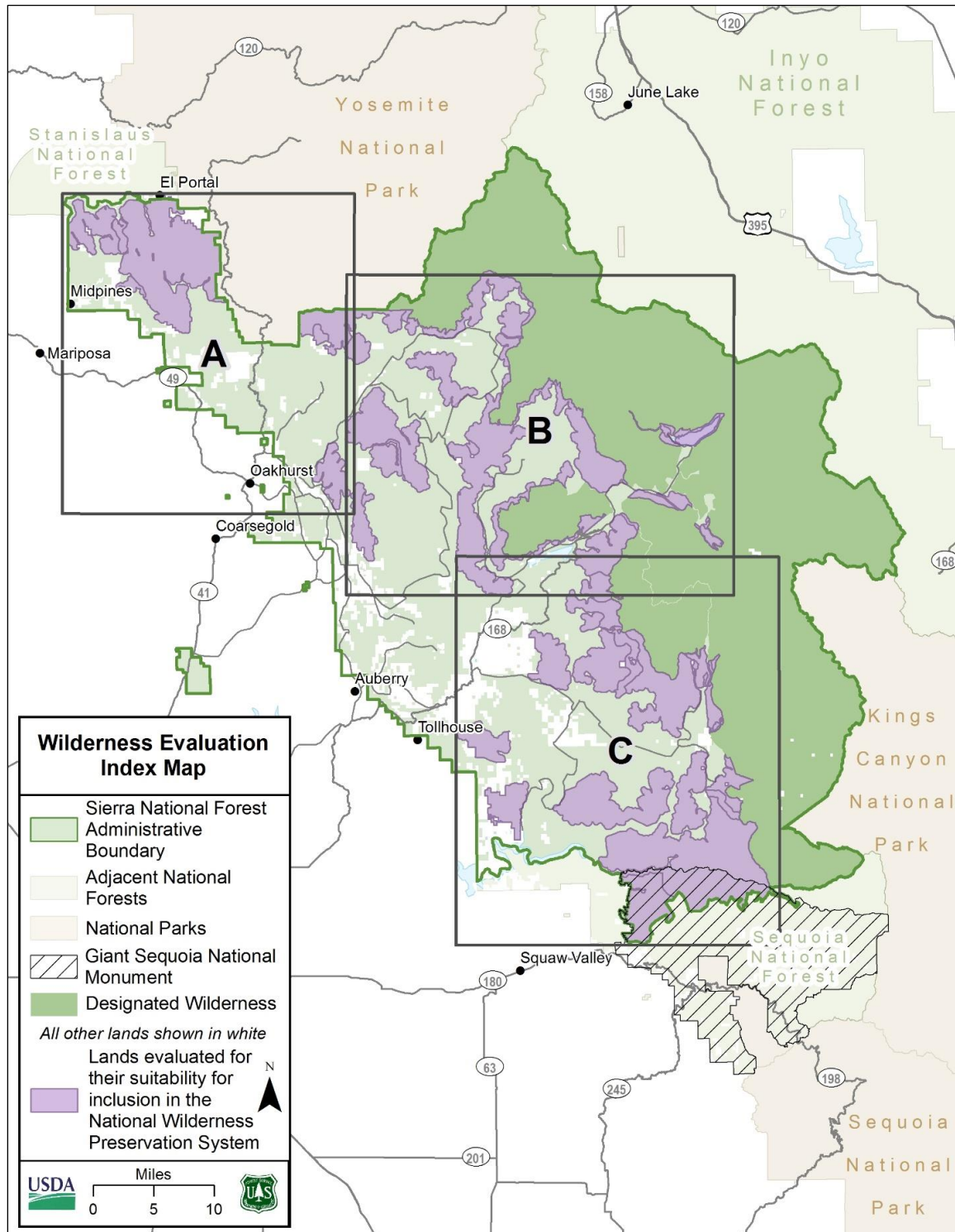
Manageability

The one manageability concern is the presence of the permitted water ditch and associated water rights to an adjacent private property owner. This easement was awarded through court order and

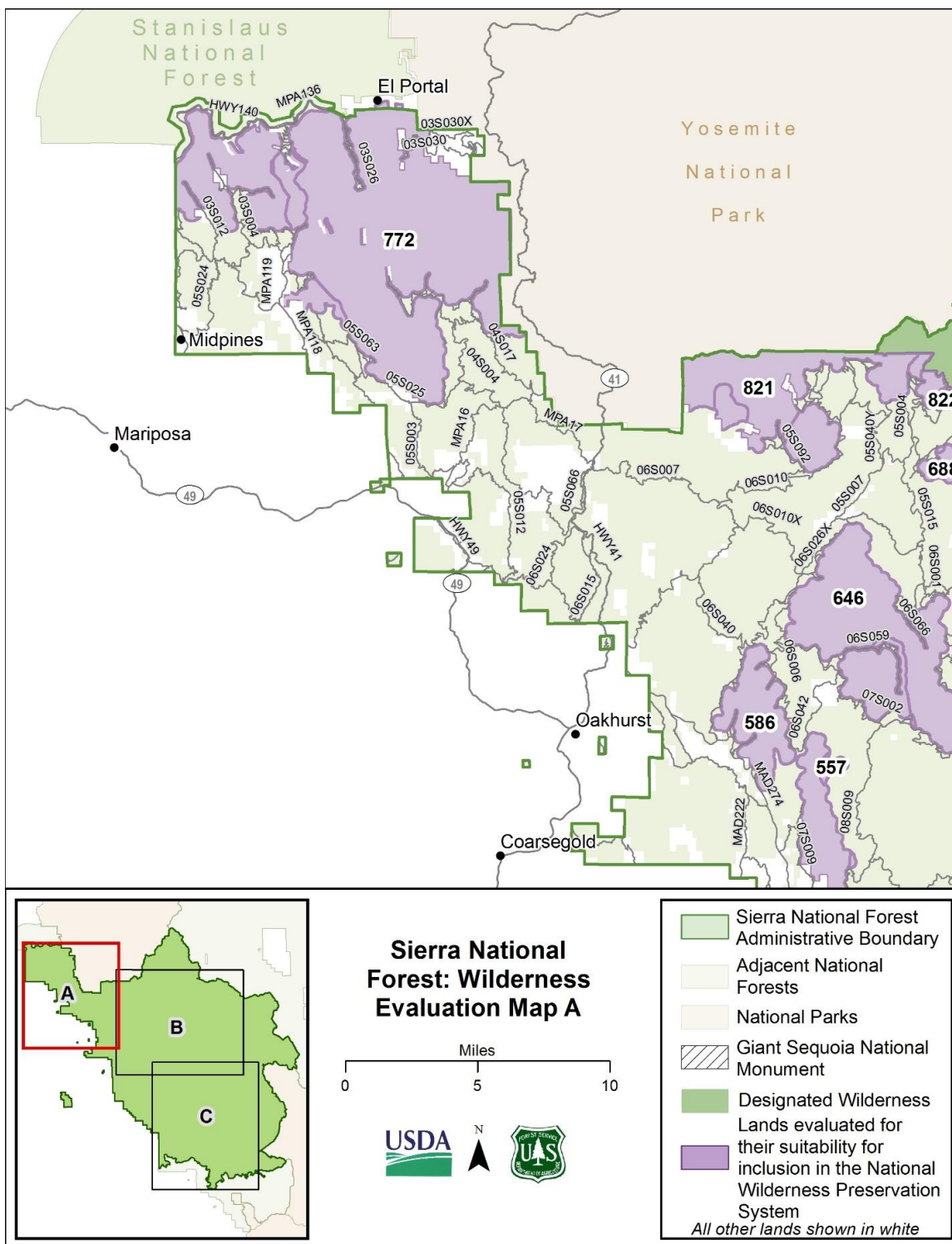
removal is not possible. This water line could be removed from the unit. The reintroduction of a more natural fire regime would restore the ecosystem to one whose appearance is the result of natural processes and provide enhanced habitat opportunities to the rare plants and animals within the unit. Interpretive and educational opportunities exist for the old redwood logging features that remain 100 years after their use and abandonment.

Sierra National Forest

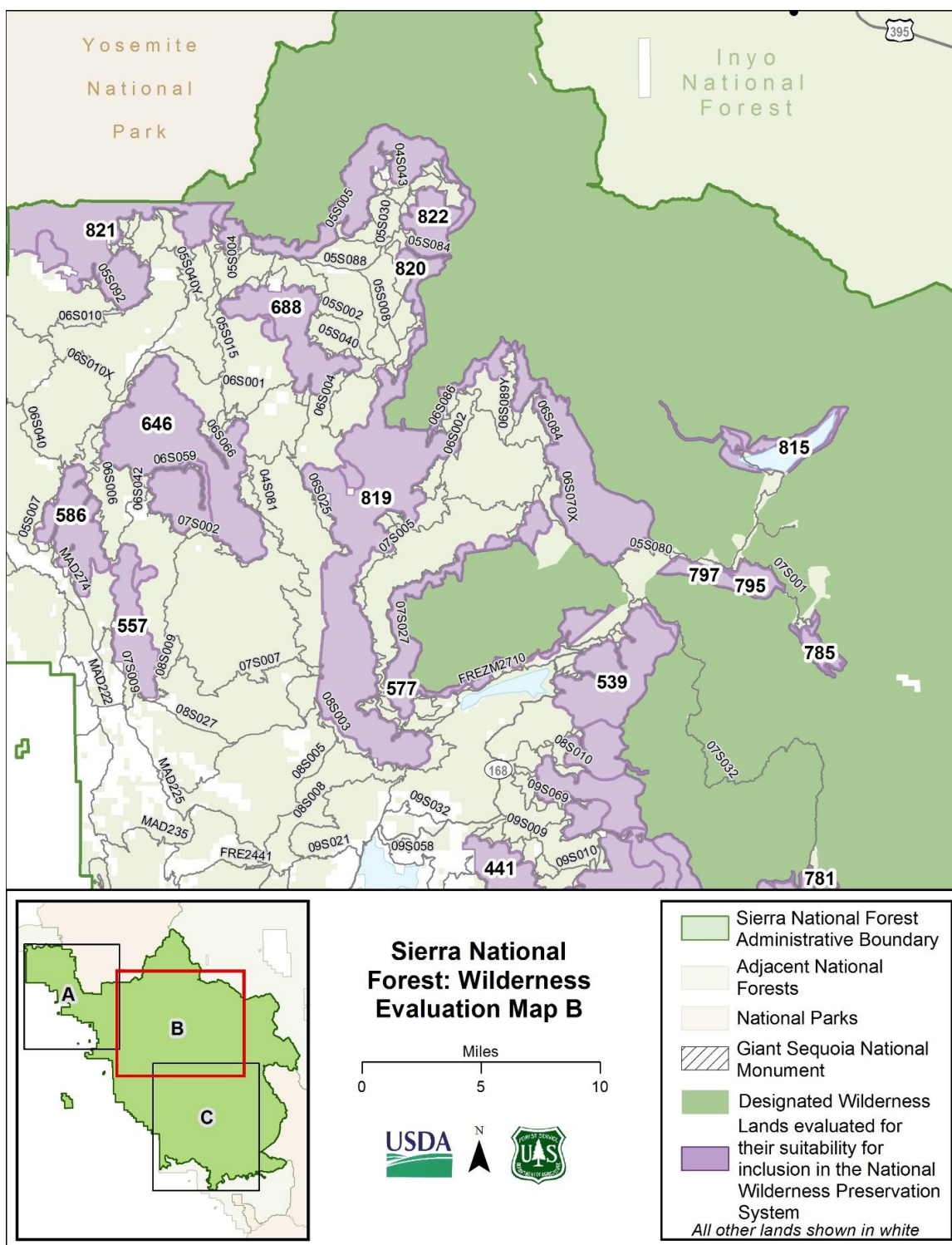
Evaluation Maps



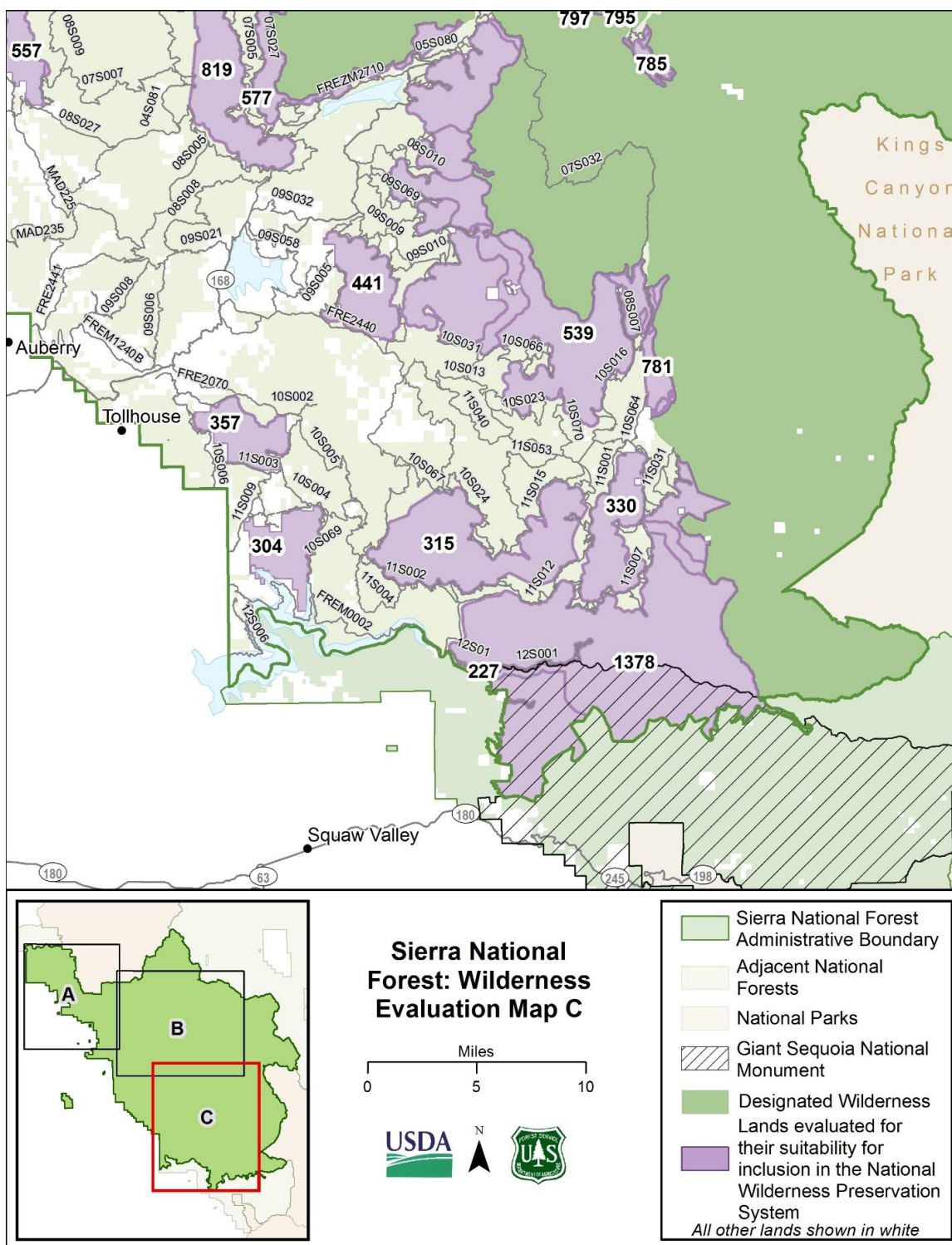
Map B-63. Map index for Sierra National Forest lands evaluated for their suitability to be recommended for wilderness designation



Map B-64. Sierra National Forest evaluation map A



Map B-65. Sierra National Forest evaluation map B



Map B-66. Sierra National Forest evaluation map C

Polygon 304 (Cat's Head Mountain)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited in this polygon due to the high-use Trimmer Springs Road, motor boats in Pine Flat Reservoir, and an extensive network of authorized forest system roads along the north and east perimeters. Sights and sounds would likely penetrate throughout much of the polygon. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise none of the area. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System, however, comprise 5,181 acres.

General Description

This area includes 5,916 acres of mixed brush, conifers and granite knobs north of Pine Flat Reservoir (Map B-66, Sierra National Forest evaluation map C).

National Vegetation Classification System data indicates none of the polygon consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 5,181 acres, which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland and savanna, and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is bordered along the north and east by the high-use Trimmer Springs Road and an extensive network of authorized forest system roads. It is also partially bordered by private property and the Pine Flat Reservoir, which allow motorized water craft and non-motorized fishing boats. There is a cattle allotment, Sycamore Allotment, with permitted grazing March through June. Grazing structures are cattle-guards, drift fences, boundary fences and visible cattle trails. There are areas with fuel breaks to prevent fire traveling to specific areas, such as in Pine Flat Reservoir.

Numerous introduced plants are present, especially herbaceous species in more open areas. Non-native annual grasses and forbs from Europe are abundant, including Italian thistle, tocalote and milk thistle. Contiguous habitat for fisheries and wildlife species exist within the area. The California Department of Fish and Wildlife stock trout in adjacent waterways. There are no overall significant impacts to species populations.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is small in size and adjacent to private property. Recreational activities include hiking, riding, fishing and hunting. Recreation at Pine Flat Reservoir includes motorized and non-motorized boat use. Due to the size of the lake and adjacent topography, the sounds from water craft and motorized use on roads can be heard from a considerable distance.

Other Features of Value

There is potential habitat for California red-legged frog (Endangered Species Act listed); potential and occupied habitat for western pond turtle; and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

This area is culturally sensitive and Tribes in the area consider it a special interest area, including Cold Springs Rancheria of Mono Indians, Big Sandy Rancheria of Mono Indians, North Fork Mono Tribe and the Haslett Basin Traditional Committee (Holkoma Mono). There are cultural and historical sites that provide opportunities for important research and traditional ceremonial use.

Manageability

Motorized use is authorized in the reservoir.

Polygon 315 (Sycamore Springs)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are numerous waterfalls on Dinkey Creek, highly scenic granite features, rare plants and aquatic wildlife. Due to the size of the polygon and lack of motorized roads or trails within the polygon, there are opportunities for solitude or primitive and unconfined recreation. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System, however, comprise 10,600 acres.

General Description

Polygon 315 is a 17,908 acre area southwest of Wishon Reservoir (Map B-66, Sierra National Forest evaluation map C). The area ranges in elevation from 1,500 to 8,100 feet. National Vegetation Classification System data indicates 2 percent of the area of the polygon (430 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 10,600 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California Central Valley mixed oak savanna, California lower montane blue oak-foothill pine woodland and savanna, Mediterranean California mesic mixed conifer forest and woodland, and Mediterranean California mixed oak woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Vegetation is primarily oak woodlands and mixed conifer forests. The area includes old-growth ponderosa pine forest. The vegetation in the area is not within the natural range of variation. Fire exclusion has contributed to altering the herbaceous understory in openings at lower elevations. There are areas with a heavy dead and down fuel component. Contiguous habitat for fisheries and wildlife species exists within the area. There are no overall significant impacts to species populations. The eastern portion includes the Teakettle Experimental Forest, which has been

extensively managed for forest research with thinning and burning activities. Two grazing allotments, Patterson Mountain and Thompson, are currently grazed March through September. The California Department of Fish and Wildlife stock trout in adjacent waterways. About half of the area is managed as an inventoried roadless area. The area is surrounded by an extensive network of roads, power lines and other facilities. There are cattle fences. Fence Meadow Lookout (built in 1934) is visible on the northwest corner of the area. Invasive plant species include Spanish broom, Italian thistle and tocalote.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational activities include whitewater kayaking, canyoneering, hiking, fishing and hunting. Dinkey Creek provides an outstanding opportunity for challenge and self-reliance for kayakers and canyoneers. Numerous waterfalls exist on Dinkey and its tributaries in the area, followed by eroded, deep plunge pools. Black Rock, Patterson Bluffs and Indian Rock are highly scenic granite features. The historic Fence Meadow Lookout would be visible to over 50 percent of the interior of the unit. Due to the size of the polygon and lack of motorized roads or trails within the polygon, there are opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

Rare plants include *Tauschia howellii* at Patterson Mountain. Rare ecosystems include fens in many of the meadows at higher elevations of the unit. There is potential and suitable habitat, occupied habitat, and proposed critical habitat for the Yosemite toad; potential and suitable habitat for Sierra Nevada yellow-legged frog and California red-legged frog (Endangered Species Act listed); potential and suitable habitat for western pond turtle; and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

Teakettle Experimental Forest is home to Forest Service watershed and vegetation studies since the 1930s, and there are historic structures built by the Civil Conservation Corp and Works Progress Administration. There are remains of historic mining, livestock management, and Forest Service administration in the unit.

This area is culturally sensitive and is considered a special interest area from Tribes, including Cold Springs Rancheria of Mono Indians, Big Sandy Rancheria of Mono Indians, North Fork Mono Tribe and the Haslett Basin Traditional Committee (Holkoma Mono). There are cultural and historical sites providing important scientific and cultural values. This unit is part of the homeland of the Holkoma Mono people. Ethnographic reports identify areas of significant cultural value including Indian Rock. There are numerous prehistoric archaeological sites and reported Indian trail systems in the Dinkey Creek drainage.

Numerous waterfalls exist on Dinkey and its tributaries in the area, followed by eroded, deep plunge pools. Black Rock, Patterson Bluffs and Indian Rock are highly scenic granite features. The area includes old-growth ponderosa pine forest.

Manageability

About half of the area is managed as an inventoried roadless area. The northern portion of this area is included in the Dinkey Collaborative boundary¹. A portion of the extensively managed Teakettle Experimental Forest is located in the northeast area of the polygon.

Polygon 330 (North Fork Kings River)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The Granite Gorge area offers some opportunities for solitude or primitive and unconfined recreation; however, a portion of the area is within the Federal Energy Regulatory Commission boundary. Throughout most of the polygon, opportunities for solitude or primitive and unconfined recreation are limited, due to several developments along the northern boundary, including a paved road, Helms power project, a highly developed recreation area, and motorized boating in Wishon Reservoir. Sights and sounds would likely penetrate throughout much of the polygon. There are also authorized forest system roads that cherry stem to form the boundary near Sugarpine Hill and the Kings River Geological area. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System, however, comprise 5,877 acres.

General Description

This area includes 7,804 acres of primarily granite domes and slabs south of Wishon Reservoir (Map B-66, Sierra National Forest evaluation map C). The North Fork of the Kings River bisects the polygon. The Granite Gorge is part of the Kings River and is very deep and very narrow. The Rancheria Creek and other streams create dramatic waterfalls into the Kings River.

National Vegetation Classification System data indicates 9 percent of the area of the polygon (736 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 5,877 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is bordered by roads and Wishon Reservoir. There are also authorized forest system roads that cherry stem to form the boundary near Sugarpine Hill and the Kings River Geological area. Portions of the unit are within the Pacific Gas and Electric Helms hydropower project. Contiguous habitat for fisheries and wildlife species exist within the area. Vegetation in the area is

¹ The Dinkey Collaborative is a group of stakeholders representing diverse public interests and California Native American Tribes, working with the U.S. Forest Service and other public agencies to implement the federal Collaborative Forest Landscape Restoration Program on the Dinkey Landscape, Sierra National Forest, California. As part of the restoration effort, the group designs projects to create a diversity of tree ages and to increase the proportion of pines in the stands.

not within the natural range of variation. Fire exclusion has contributed to altering the herbaceous understory in openings at lower elevations. There are areas with a heavy dead and down fuel component. There are active grazing allotments (Patterson Mountain and Collins) but no active grazing occurring in the polygon due to steep terrain. Stream flows have been altered by the Wishon Dam. Invasive plants species include bull thistle. The California Department of Fish and Wildlife stock trout in adjacent waterways. Plant species composition in the river and processes are altered due to changing water flows.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational activities include hiking, horseback riding, fishing, hunting and sightseeing. There is one trail in the unit. The area is bisected by the North Fork of the Kings River. Granite Gorge, part of the Kings River, is a very narrow and deeper than the Grand Canyon in Arizona. This narrow area has opportunities for solitude or primitive and unconfined recreation; however most of the unit is dominated by the Wishon Dam, roads and high use recreation and opportunities for solitude or primitive and unconfined recreation are limited.

Other Features of Value

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including Cold Springs Rancheria of Mono Indians, Big Sandy Rancheria of Mono Indians, North Fork Mono Tribe and the Haslett Basin Traditional Committee (Holkoma Mono). There are cultural and historical sites providing important scientific and cultural values.

There is potential and suitable habitat for Yosemite toad; potential and suitable habitat for Sierra Nevada yellow-legged frog and California red-legged frog (Endangered Species Act listed); potential and suitable habitat for western pond turtle; and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

The area is bisected by the North Fork of the Kings River. Directly south of the Wishon Reservoir is the Granite Gorge. The Granite Gorge is a narrow river canyon deeper than the Grand Canyon in Arizona. The unit includes the Kings Canyon Geological Area, a network of caverns and related features within a marble unit covering 388 acres of the Lower Kings River Roof Pendent, a geological feature.

Manageability

Portions of the unit are within the Pacific Gas and Electric Helms hydropower project.

Polygon 357 (Soaproot)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to audible motorized traffic from a paved road to the north that it is visible in many places in the polygon. There is a motorized trail authorized under special use permit within the polygon. Sights and sounds from motorized use would likely penetrate throughout much of the polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,390 acres.

General Description

Polygon 357 is a 5,374 acre area located north of Pine Flat Reservoir and south of Shaver Lake (Map B-66, Sierra National Forest evaluation map C).

National Vegetation Classification System data indicates 1 percent of the polygon (37 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 5 ecological groups with a total area of 2,390 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is California lower montane blue oak-foothill pine woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area features oak woodlands, mixed brush, conifers and granite knobs. The area is bordered by roads, a transmission line and private property; the transmission line is visible from within the unit. A small section in the northeast corner has a motorized trail under a special use permit. Contiguous habitat for fisheries and wildlife species exists within the area. The California Department of Fish and Wildlife stock trout in adjacent waterways. There are no overall significant impacts to species populations.

Forests in the Soaproot area have been altered by fire exclusion, railroad logging and other activities, resulting in changes in ecosystem structure, composition and connectivity. Forests are overstocked, creating forest health issues and a high need for active vegetation management and restoration. Fire has been used in this polygon for under-burning to reduce the fuel loading.

There are invasive plant species in openings, especially non-native annual grasses. Tocalote, foxglove and bull thistle are likely present within the unit. Some invasive plants result in significant alterations in ecosystem structure and composition. The area is currently grazed from March through June as part of the Sycamore Allotment. Development associated with cattle grazing includes a corral and fencing. There is a loss of vegetation associated with salt blocks.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreation activities include off-trail hiking, horseback riding, hunting and fishing. There are no authorized trails in the area. Opportunities for solitude or primitive and unconfined recreation are limited due to the close proximity of roads and motorized trails surrounding most of this small polygon.

Other Features of Value

Rare Forest Service sensitive species plants are present in the area: golden lupine (*Lupinus citrinus* var. *citrinus*), and tree anemone (*Carpenteria californica*).

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including Cold Springs Rancheria of Mono Indians, Big Sandy Rancheria of Mono Indians, North Fork Mono Tribe and the Haslett Basin Traditional Committee (Holkoma Mono).

The following species and habitats are present: Potential habitat for California red-legged frog (Endangered Species Act listed) and potential and occupied habitat for western pond turtle and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

Manageability

There is a small section in the northeast corner where a motorized trail under special use permit crosses into the unit.

Polygon 441 (Bald Mountain)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the polygon, and paved roads and an extensive network of authorized forest system roads around most of the perimeter. Sights and sounds from motorized use would likely penetrate throughout much of the polygon. Mechanized fuels management treatments are currently authorized in the southern portion of the polygon.

General Description

Polygon 441 is a 6,892 acre area located east of Shaver Lake (Map B-66, Sierra National Forest evaluation map C). National Vegetation Classification System data indicates 10 percent of the area of the polygon (111 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 5 ecological groups with a total area of 1,216 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area features mixed conifer and woodland vegetation. The area has an extensive network of authorized motorized trails within the polygon, and paved roads and an extensive network of authorized forest system roads in the perimeter. Invasive plant species like annual grasses, tocalote, foxglove and bull thistle are present. There is contiguous habitat for some fisheries and wildlife species. The Lahontan cutthroat trout is in Rock Creek on the east boundary of the unit.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized motorized trails within the polygon, and paved roads and an extensive network of authorized forest system roads around most of the perimeter. Sights and sounds from motorized use would likely penetrate throughout much of the polygon.

Other Features of Value

The rare and Forest Service sensitive species of plants in the area include the golden lupine (*Lupinus citrinus* var. *citrinus*) and the tree anemone (*Carpenteria californica*).

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including Cold Springs Rancheria of Mono Indians, Big Sandy Rancheria of Mono Indians, North Fork Mono Tribe and the Haslett Basin Traditional Committee (Holkoma Mono). There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values.

The following species and habitats are present: potential habitat for California red-legged frog (Endangered Species Act listed); potential and occupied habitat for western pond turtle and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

Manageability

Mechanized fuels management treatments are currently authorized in the southern portion of the polygon.

Polygon 539 (Adjacent to Dinkey Lakes Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area has impressive granitic domes and endangered species including rare plants. This large polygon has nonmotorized areas with ample opportunities for solitude or primitive and unconfined recreation, especially near the designated wilderness boundary. In the motorized areas that bisect and encompass portions of this polygon, opportunities for solitude or primitive and unconfined recreation are limited, including in the surface water for Courtright Reservoir area that is authorized for low speed motorized boats. The sights and sounds of motorized use penetrate the motorized areas. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 1,272 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,850 acres. Ecological groups with less than 10 percent of their national extent in the National Wilderness Preservation System comprise 715 acres. Ecological groups with less than 20 percent of their national extent in the National Wilderness Preservation System comprise an additional 1,216 acres.

General Description

Polygon 539 is a 48,312 acre area located along the western edge of the Dinkey Lakes Wilderness (Map B-65, Sierra National Forest evaluation map B and Map B-66, Sierra National Forest evaluation map C). Elevation in the area ranges from 6000 feet to about 10,000 feet.

National Vegetation Classification System data indicates 3 percent of the area of the polygon (1,272 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. Each of these ecological groups comprises less than 1,000 acres in this polygon. This polygon also contains 5 ecological groups with a total area of 1,850 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area features forested slopes of mixed conifer and woodland vegetation, minor creek drainages, scattered meadows, fens and lakes. Contiguous habitat for fisheries and wildlife species exists within the area, with no overall significant impacts to species populations. There are many developments within the polygon and along the area boundary. It is bisected and

occupied by several authorized off-highway vehicle trails, including Mirror Lake, Strawberry Lake, Coyote Lake and Swamp Lake Trails. Developments along the border include China Peak ski area; Courtright road; Dusy-Ershim and Brewer Lake authorized motorized trails; Forest Service system roads 10S66, 9S10, 9S69, 8S31 and 7S36A; Highway 168; and Kaiser Pass road. There are private land parcels in the area. The lower southern quarter of this area is within the Dinkey Collaborative area. Bear Butte, Midge Creek and Deer Lake over snow vehicle (OSV) trails and routes also border this area. The Whitebark Vista and Deer Lake OSV routes are partially within the north and middle portions of the polygon. This unit includes 1,895 acres of surface water for Courtright Reservoir that is managed for low speed motorized boats.

Historic and current grazing occurs in the Dinkey, Blasingame, Patterson and Helms (vacant) Allotments, where cow-calf pairs are permitted from June through September. The Blasingame Allotment currently has 265 cow-calf pairs permitted. There is a network of cattle trails. Vegetation in the area is not within the natural range of variation. Fire exclusion has contributed to altering the herbaceous understory in openings at lower elevations. There is a heavy dead and down fuel component in portions of the polygon. Invasive plant species include bull thistle and woolly mullein. The California Department of Fish and Wildlife stock non-native trout in streams, lakes, and adjacent waterways.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational activities include hiking, horseback riding, off-highway vehicle riding, boating, fishing, hunting, camping, rock climbing and general sightseeing. It is popular with OSV riders in the winter, who commonly go off trail and ride cross country. This large polygon has nonmotorized areas with ample opportunities for solitude or primitive and unconfined recreation, especially near the designated wilderness boundary. In the motorized areas that bisect and fill this polygon, the opportunities for solitude or primitive and unconfined recreation are limited, including the areas authorized for low speed motorized boats.

Other Features of Value

There is a rare plant present, the short-leaved hulsea (Forest Service sensitive species). There are rare ecosystems present, including fens and peatlands in some of the meadows and possibly lakeshores (for example, Arkansas Meadow confirmed 2014 field season).

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including North Fork Rancheria of Mono Indians, North Fork Mono Tribe, Big Sandy Rancheria of Mono Indians, Picayune Rancheria of Chukchansi Indians, Cold Springs Rancheria of Mono Indians, and Native American Organizations like the Mono Nation. There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values.

The following species and habitats are present: potential/suitable habitat, occupied habitat, proposed critical habitat for Yosemite toad and potential/suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed).

The area contains dozens of lakes and meadows situated in glacier-carved bowls. Dinkey Dome and Marble Point are both large, impressive edifices that rise above Dinkey Creek and one of its tributaries and may be seen from locations within this polygon.

Manageability

It is bisected and occupied by several authorized off-highway vehicle trails, including Mirror Lake, Strawberry Lake, Coyote Lake and Swamp Lake Trails. There are 1,895 acres of surface water for Courtright Reservoir is managed for low speed motorized boats.

Polygon 557 (Peckinpah Creek)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This area has rare plants, aquatic endangered species, the predominate South Fork Bluffs, active grazing and is managed for timber harvest. Opportunities for solitude or primitive and unconfined recreation are limited due to authorized motorized trails within the polygon, and an extensive network of authorized forest system roads along the perimeter. Sights and sounds of motorized use penetrate this small polygon. The 2015 Willow Fire burned approximately 90 percent of this polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,670 acres.

General Description

Polygon 557 is a 5,073 acre area located southeast of Bass Lake (Map B-65, Sierra National Forest evaluation map B). It includes South Fork Bluffs.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (45 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 6 ecological groups with a total area of 1,670 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Several wildfires burned through this area over the last decade or so; the Willow Fire of 2015 burned through 90 percent of the polygon. Vegetation changed from oak, conifer and brush to mostly brush component with snags. Meadows and riparian areas occur in the area. The polygon has three areas of authorized motorized trails within its boundaries, and it is bordered by a network of forest system roads and several private land parcels. The area was historically and is currently grazed. It is partially within the Central Camp Allotment where 101 cow-calf pairs are permitted to graze from June 1 through September 30. Developments include a corral, holding fields, cattle trails and a cow camp in the unit. This area is low elevation and close to Bass Lake and private land. Invasive plant species include cheat grass, velvet grass, bull thistle, woolly mullein and Klamath weed. Contiguous habitat for fisheries and wildlife species exist within the area. The California Department of Fish and Wildlife stock trout in adjacent waterways.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreation use includes hiking, off-highway vehicle riding, fishing and hunting. Due to the relatively small size, elongated shape and presence of motorized use within and outside the polygon opportunities for solitude or primitive and unconfined recreation are limited.

Other Features of Value

The rare Rawson's flaming trumpet (*Collomia rawsoniana*), a Forest Service sensitive species, occurs along a few streams.

The following species and habitats are present: potential and suitable for Yosemite toad, Sierra Nevada yellow-legged frog, and California red-legged frog (Endangered Species Act listed); potential habitat for western pond turtle; and potential habitat for foothill yellow-legged frog (Forest Service Sensitive).

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including North Fork Rancheria of Mono Indians, Picayune Rancheria of Chukchansi Tribe and North Fork Mono Tribe.

The South Fork Bluffs is a predominate feature of the area.

Manageability

Post-fire activities are being considered in the 2015 Willow Fire area.

Polygon 577 (Adjacent to Kaiser Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area has rare plants, endangered species, old growth mixed conifer forests and is adjacent to the Kaiser Wilderness. Opportunities for solitude or primitive and unconfined recreation are limited on the south side of this polygon as the area is adjacent to paved and authorized forest system roads, highly developed recreation sites, recreation residences, organization camps and resorts. This extremely high use area affects sight and sounds within the polygon. Opportunities for solitude or primitive and unconfined recreation are limited along the west and north perimeter by extensive use of authorized forest system roads. Authorized post-fire treatments (2013 Aspen Fire) are within this polygon and will include use of motorized tools. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,700 acres.

General Description

Polygon 577 is a 7,127 acre C-shaped polygon that surrounds the boundary of the Kaiser Wilderness (Map B-65, Sierra National Forest evaluation map B).

National Vegetation Classification System data indicates 1 percent of the area of the polygon (83 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains ecological groups with a total area of 1,700 acres which have less than 20 percent of their national extent protected

in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This area is located between the Kaiser Wilderness and a network of roads to the north, west, and south of the Kaiser Wilderness. Old-growth mixed conifer forests are present. The west side of the polygon borders extensive development along Huntington Lake, which consists of 491 recreation residences, six campgrounds, two picnic sites, two organized camps and two resorts. Contiguous habitat for fisheries and wildlife species exist within the area, with no overall significant impacts to species populations. The California Department of Fish and Wildlife stock trout in reservoirs and waterways. Southern and western portions of this area were affected by the 2013 Aspen Fire, with some high severity effects changing the vegetation composition.

The area is within two active cattle grazing allotments, Kaiser and Mount Tom. The area around Huntington Lake is closed to grazing. Otherwise, the area is permitted for grazing June through September. Grazing facilities include a corral off Stump Springs Road, noticeable cattle trails and stock drives. Scattered patches of bull thistle and woolly mullein are present, especially along Huntington Lake.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited on the south side of this polygon as the area is adjacent to paved and authorized forest system roads, highly developed recreation sites, recreation residences, organization camps and resorts. This extremely high use area affects sight and sounds within the polygon. Opportunities for solitude or primitive and unconfined recreation are limited along the west and north perimeter by extensive use of authorized forest system roads.

Other Features of Value

The area includes old-growth Sierra mixed-conifer forest and several meadows (for example, Huckleberry Meadow) contain fens, or peatland ecosystems. Rare plants include short-leaved hulsea (*Hulsea brevifolia*), a Forest Service sensitive species, and *Utricularia intermedia* in Huckleberry Meadow. Aquatic species and habitats include potential and suitable habitat, occupied habitat, proposed critical habitat for Yosemite toad and potential and suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed).

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including Mono Nation, North Fork Rancheria of Mono Indians, North Fork Mono Tribe, Big Sandy Rancheria of Mono Indians and Picayune Rancheria of Chukchansi Indians. There are cultural and historic sites providing important scientific and cultural values.

Manageability

This area is located between the Kaiser Wilderness and a network of roads and borders extensive development along Huntington Lake. Authorized post-fire treatments for the 2013 Aspen Fire area are within this polygon and will include use of motorized tools.

Polygon 586 (Graham Mountain)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area is the foothills in background to residents and visitors of Bass Lake and is home to some endangered species. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the entire perimeter, and the close proximity to the Bass Lake with motorized boating. Sights and sounds of motorized use penetrate this small polygon. Due to drought and subsequent bark beetle outbreak, the forest is considering treatments to reduce fuels including treatments with motorized tools. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 3,300 acres.

General Description

Polygon 586 is a 5,412 acre area located east of Bass Lake (Map B-64, Sierra National Forest evaluation map A). This area offers spectacular scenery for those recreating at Bass Lake.

National Vegetation Classification System data indicates 1 percent of the area of the polygon (50 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 3,330 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This area features oak woodlands and a few meadows. It offers contiguous habitat for fisheries and wildlife species. Vegetation in the area is not within the natural range of variation due in part to fire suppression activities. There are substantial areas with a heavy dead and down fuel component. There is an extensive network of paved and authorized forest system roads around the entire perimeter of the polygon, including many roads that cherry stem the polygon, and motorized boating occurs in Bass Lake. Central Camp Grazing Allotment is permitted to graze from June 1 through September 30. Invasive plant species include cheat grass, velvet grass, bull thistle, woolly mullein and Klamath weed. The California Department of Fish and Wildlife stock trout in adjacent waterways.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is adjacent to a busy recreational lake (almost 600,000 visitors per year) and roads. Recreational opportunities include off-trail hiking, hunting, fishing and sightseeing. There are no trails in the unit. Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the entire perimeter, and the close proximity to the Bass Lake with motorized boating.

Other Features of Value

This area is culturally sensitive and is considered a special interest area by Tribes in the area, including North Fork Rancheria of Mono Indians, Picayune Rancheria of Chukchansi Tribe and the North Fork Mono Tribe. There are cultural and historic sites providing important scientific and cultural values.

Aquatic species and habitats include potential and suitable for Yosemite toad, Sierra Nevada yellow-legged frog and California red-legged frog (Endangered Species Act listed); potential habitat for western pond turtle; and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

Manageability

Due to drought and subsequent bark beetle outbreak, the forest is considering treatments to reduce fuels including treatments with motorized tools.

Polygon 646 (Shuteye)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area has rare plants, endangered species and old growth red fir forests. The area could be reshaped to exclude the authorized motorized trail area. Opportunities for solitude or primitive and unconfined recreation are limited in areas with authorized motorized trails or along the boundary with the extensive network of authorized forest system roads. An authorized forest system road cherry stems into the polygon area to Shuteye Peak, and on the east side of the unit. Sights and sounds of motorized use penetrate this small polygon. Continuing fuels treatments in the western portion of this polygon near Central Camp is desirable. The reshaping would reduce the adjacent motorized recreation; the remaining unit would be reduced to approximately 10,000 acres. This polygon presents a moderate opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 653 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 7,765 acres.

General Description

Polygon 646 is a 18,013 acre area located along Chiquito and Whiskey Ridges, north of Forest Road 6S42 (Central Camp Road) and east of FR6S59 (Map B-65, Sierra National Forest evaluation map B).

National Vegetation Classification System data, based on the polygon size of 18,013 acres, indicates 4 percent of the area of the polygon (653 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains five ecological groups with a total area of 7,765 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The unit is a combination of forested slopes and granite domes. The main vegetation type in the area is Sierra mixed conifer and red fir forest (including old growth) and montane chaparral with areas of barren ground. It includes Little Shuteye Peak and Chilkoot Lake. There are few meadows in the area. There is unique aquatic and emergent flora around Chilkoot Lake. The area includes contiguous habitat for fisheries species and wildlife within the area. There are no overall significant current impacts to species populations. California Department of Fish and Wildlife stock trout in adjacent waterways and stock in lakes present in this unit. Invasive plant species include bull thistle and woolly mullein.

The active Shuteye Lookout is accessed by a primitive road/motorized trail that cherry stems the south-central portion of the polygon. There are also authorized motorized trails within this south-central portion. The whole polygon is bordered by – or in close proximity to – highway 7, Minarets Road, Central Camp Road, and other authorized forest system roads. The southern portion was affected by the French Fire of 2014 with potential remnants from suppression actions including direct and indirect fire line construction, both hand and mechanical. There are areas with a heavy dead and down fuel component due to fire suppression. The prominent ridge line of Whisky Ridge is desirable for use in fire suppression actions for fire travelling into the conifer portions of the forest from the San Joaquin River and Mammoth Pool area. Chilkoot Lake is within the unit and is part of the Pacific Gas and Electric Crane Valley project. A ditch diverts water into Chilkoot Lake and controls lake water levels. On the northwest shore of Chilkoot Lake there is vehicle access to a popular dispersed camping area that is immediately adjacent to the unit. The area includes 3 historic and active cattle allotments (Central Camp, Beasore and Chiquito).

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational opportunities include hiking, rock climbing, hunting and sightseeing. Visitors may experience risk and challenge if engaging in rock climbing, off-trail hiking and scrambling. Various recreational uses like visiting the fire lookout, heavy dispersed camping, use of the cherry stem primitive road to Shuteye Peak and motorized trail area limit opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

Rare plants present in the area include Shuteye Peak fawn lily (*Erythronium pluriflorum*), Kellogg's lewisia (*Lewisia kelloggii* ssp. *Kelloggii*) and short-leaved hulsea (*Hulsea breviflora*) (Forest Service sensitive species).

Aquatic species and habitats include potential and suitable habitat for Yosemite toad, Sierra Nevada yellow-legged frog, and California red-legged frog (Endangered Species listed); potential and occupied habitat for western pond turtle; and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including North Fork Rancheria of Mono Indians and North Fork Mono Tribe. There are cultural and historic sites providing important scientific and cultural values.

Manageability

An authorized forest system road cherry stems into the polygon area to Shuteye Peak. There is another cherry stem road on the east side of the unit. There are authorized motorized trails in the south-central area. Continuing fuels treatments in the western portion of this polygon near Central Camp is desirable.

Polygon 688 (Chiquito Creek)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to a scenic byway to the south and an extensive network of authorized forest system roads along the east, north and southwestern perimeters. Road density is high surrounding this area, with the sight and sounds of motorized use regularly present. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 513 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 4,126 acres.

General Description

This area consists of 6,515 acres of conifer forest between the Minarets and Beasore Roads (Map B-65, Sierra National Forest evaluation map B). It is a northeast facing slope bounded on the south by the Sierra Vista Scenic Byway just east of Minarets Work Center.

National Vegetation Classification System data, based on the polygon size of 6,515 acres, indicates 8 percent of the area of the polygon (513 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 4,126 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California Mesic Mixed Conifer Forest and Woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Road density is high surrounding the area. Naturalness has been degraded by timber harvest, grazing and fire suppression. Invasive species include scattered bull thistle and woolly mullein. The area is not within natural range of variation for vegetation communities, with a very small portion affected by fire within the last 20-30 years. There are areas with a heavy dead and down fuel component due to fire suppression. Contiguous habitat for fisheries and wildlife species exists within the area. It is grazed as part of the Chiquito Allotment stocked with 158 cow-calf pair from June 1 through September 15.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is next to a network of roads and fuel breaks. Road density is high surrounding this area and the sounds of traffic are common. No system trails exist in the area, but there is off-trail hiking and hunting. Opportunities for solitude or primitive and unconfined recreation are limited

due to a scenic byway to the south and an extensive network of authorized forest system roads along the east, north and southwestern perimeters.

Other Features of Value

There are no rare plants known in the area. There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values.

Manageability

Road density is high surrounding this area and the sounds of vehicles are regularly present. The area is small in size, has an irregular shape and adjacent land uses that make managing the area to preserve wilderness characteristics challenging.

Polygon 772 (Devil Gulch)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Topography is steep in most areas, with rugged ridges and canyons, limiting access. Screening is present due to the topography, conifers in the high elevation and chaparral in the lower elevation. There is minimal evidence of civilization within the majority of the polygon. There are opportunities for solitude or primitive and unconfined recreation in nonmotorized areas, the potential for encounters with other visitors is low. Opportunities for solitude or primitive and unconfined recreation are limited in the areas with authorized motorized trails.

The cherry stem roads and main ridgeline are considered essential to stop a fire going in to Yosemite. The terrain is such that if a fire did start, high value resources like the Yosemite West community could quickly become threatened. Aggressive full suppression response would be needed within the unit to protect adjacent property. It is likely that dozers and other motorized equipment would be extensively used within the area even if it became designated wilderness.

This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the national wilderness preservation system comprise 264 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise an additional 33,336 acres.

General Description

Located south of the Merced Wild and Scenic River (Map B-64, Sierra National Forest evaluation map A), Polygon 772 is 47,747 acres in size, located within the Devil Gulch area and characterized by steep rugged canyon terrain.

National Vegetation Classification System data, based on the polygon size of 47,747 acres, indicates 1 percent of the area of the polygon (264 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 33,336 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland, Mediterranean California mixed oak woodland, Mediterranean California mesic mixed conifer forest and woodland, and Northern and Central California dry-mesic chaparral.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The species composition is mostly chaparral and is out of balance due to the fire suppression. The area provides contiguous wildlife habitat for populations in the area. The area is bounded by the Merced Wild and Scenic River and Yosemite National Park, and connectivity is provided through these corridors. The hydrological condition is good and there are high quality water resources with the South Fork of the Merced River, Devils Gulch and Granite Creek. The soils are in good condition. There are very few meadows. The air quality is impaired as it is impacted by the air quality in the San Joaquin Valley. There are two inactive grazing allotments.

The polygon is bordered to the east by Yosemite West subdivision and Yosemite National Park; to the west by private property, Bureau of Land Management land, forest system roads and developed recreation sites; to the south with forest system roads, forest lands suitable for timber production and private land parcels; and to the north with the Merced River. The area is completely bisected by an authorized motorized trail area near the central portion of the polygon and dissected in multiple areas by cherry stem forest system roads (for instance, old mining roads) and private land roads throughout the polygon. Many cherry stem roads and previously constructed dozer fire lines are considered the first defense to protecting the communities in the area; they are visible and are considered fuel break areas. As the main strategic locations for suppression, actions to take place prior to a fire entering the Midpines community (Ponderosa Way/Carstens and Jerseydale area) and the point where vegetation changes from mainly brush to conifer stands, these ridgelines will continue to be important for fire management.

Because of the fire history in the area between Hites Cove access and Bureau of Land Management lands, there are conifer plantations scattered throughout the area. Treatments occur within plantations, as well as outside of the plantations in the form of mastication, for fire and silviculture needs. Prescribed burning has been conducted in the Gimasol and Nutmeg Gulch area. Fuel breaks on the ridgelines at Felciana, Sweetwater and Ferguson have been constructed to reduce manzanita and chamise growth and continue to be highly visible, as well as the treatments within and outside of the conifer plantations. Fires in this area have been known to travel rapidly with high intensity with little to no vegetation remaining.

The six watersheds are in good hydrological condition. There are no water impoundments. The greatest indication of human impact is mining. There are at least 100 active claims in the area. The claims are visited at least annually to complete claim work. The Williams Brothers Mine has buildings in the Cold Creek area. The Williams Brothers Mine Road travels from the Merced River south and the original Hites Cove Road accesses the Hites Cove Mine. Both of these old mining roads are outside the original inventoried roadless area. The historic mining sites are substantially noticeable.

Adjacent lands also include Yosemite National Park, State Highway 140 and recreational activities associated with the Merced and South Fork of the Merced Wild and Scenic Rivers. Other adjacent lands are private land areas and as well as the power lines and other infrastructure associated with people living nearby. Grazing is not currently permitted. There are two inholdings that do not appear to have any type of access or facilities. California Department of Fish and Wildlife stock trout in adjacent water ways, and the trout may be present in this unit. Invasive plant species include annual grasses, yellow star thistle, Italian thistle, tocalote, Himalayan

blackberry, bull thistle and woolly mullein. Infestations in the main Merced River Canyon along Highway 140 have been decreasing as a result of Forest Service projects.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational opportunities include hiking, horseback riding, fishing, wildlife viewing, wildflower viewing, hunting and camping, especially along the South Fork Merced River Trail. Activities in the interior of the area are in winter, early spring and late fall due to intense temperatures in the canyon in summer. Off-trail travel is challenging due to dense brush and steep terrain. One of the highest uses in the area is the South Fork of the Merced River. Rafters access the river from Yosemite and raft to State Highway 140. There is a popular foot trail from State Highway 140 to the South Fork of the Merced River. This trail is popular in the spring to view the excellent wildflower displays. Immediately adjacent to the area are 6 recreation facilities (for instance, small campgrounds, picnic areas, a trailhead), and east, south and north are subdivisions along the edge.

Topography is steep in most areas, with rugged ridges and canyons, limiting access. Screening is present due to the topography, conifers in the high elevation and chaparral in the lower elevation. There is minimal evidence of civilization within the majority of the polygon. There are opportunities for solitude or primitive and unconfined recreation in nonmotorized areas, the potential for encounters with other visitors is low. Opportunities for solitude or primitive and unconfined recreation are limited in the areas with authorized motorized trails.

Other Features of Value

Geologic features include caves and metamorphic roof pendants. Devil's Peak provides a great viewing point. The rare limestone salamander may be present as well as the rare plants Congdon's woolly sunflower, Congdon's lewisia, Yosemite onion, Merced clarkia (state listed endangered) and Mariposa clarkia (Forest Service sensitive species) and Tompkins sedge. There is potential habitat for western pond turtle and California red legged frog.

Other designations include the Bishop Creek Ponderosa Pine Natural Research Area and the Devils Peak Botanical Area. These two areas would not impact wilderness designation.

There are known traditional areas used by the South Fork of the Merced MiWuk People to conduct gathering for basket weaving and tribal burial areas in the area between Yosemite and Hites Cove access. The area just west between Hites Cove access and Bureau of Land Management lands is culturally sensitive and considered a special interest area from Tribes in the area, which include the American Indian Council of Mariposa (Southern Sierra Miwuk Nation) and Tuolumne Band of Miwok. There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values.

The Williams Brothers Mine dates back to 1865 and covers 80 acres adjacent to the polygon. The Hite Cove Mine along the South Fork of the Merced River was discovered in 1862. Each of these mines is outside the inventoried roadless area, but the Hite Cove Mine is partially shown within the polygon area.

Manageability

The unit is not contiguous with wilderness but it is large enough at 47,748 acres to be moderately managed for preservation of wilderness characteristics. However, the area is completely bisected by an authorized motorized trail area near the central portion of the polygon and is dissected by

multiple by cherry stem forest system roads (such as old mining roads) and private land roads throughout the polygon. The cherry stem roads and main ridgeline are considered essential to stop a fire going in to Yosemite. The terrain is such that if a fire did start, high value resources like the Yosemite West community could quickly become threatened. Aggressive full suppression response would be needed within the unit to protect adjacent property. It is likely that dozers and other motorized equipment would be extensively used within the area even if it became designated wilderness.

Polygon 781 (Adjacent to John Muir Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are endangered species present and the land is adjacent to existing wilderness. Opportunities for solitude or primitive and unconfined recreation are limited in this small polygon due to high recreation use, which includes the authorized motorized area Dusy-Ershim off-highway vehicle route, with jeeps and other off-road vehicles frequently seen and heard in the area. There is also the popular Chamberlain Camp recreation site and motorized boat use in the Wishon Reservoir. Sights and sounds of motorized use penetrate this small polygon. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 523 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 276 acres.

General Description

This area includes 2,477 acres of timber, granite slabs and meadows. It is located adjacent to the southern John Muir Wilderness, between Courtright and Wishon Reservoirs (Map B-66, Sierra National Forest evaluation map C).

National Vegetation Classification System data, based on the polygon size of 2,477 acres, indicates 21 percent of the area of the polygon (523 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 5 ecological groups with a total area of 276 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Contiguous habitat for fisheries and wildlife species exists within the area. The California Department of Fish and Wildlife stock trout in adjacent waterways. No grazing is currently permitted. Fire suppression has altered vegetation density and composition. Adjacent waterways are stocked with non-native trout. The hydrologic regime in the adjacent area is extensively manipulated by the Pacific Gas and Electric hydropower system. Invasive species include bull thistle and woolly mullein.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational opportunities include hiking, horseback riding, camping, off-highway vehicles, fishing, hunting, rock climbing and general sightseeing. Climbing the granite domes in the area may present an opportunity for personal challenge. The area includes the Maxson Trailhead accessing the Blackcap Trail (non-motorized), the Chamberlain cabin and cow camp, and the adjacent Dusy-Ershim off-highway vehicle route. Jeeps and other off-road vehicles are frequently seen and heard in the area.

Opportunities for solitude or primitive and unconfined recreation are limited in this small polygon due to high recreation use, which includes the authorized motorized area Dusy-Ershim off-highway vehicle route, with jeeps and other off-road vehicles frequently seen and heard in the area. There is also the popular Chamberlain Camp recreation site and motorized boat use in the Wishon Reservoir.

Other Features of Value

A fen ecosystem likely exists in Chamberlain Meadow. Aquatic species and habitats include potential habitat, suitable habitat, occupied habitat, and proposed critical habitat for Yosemite toad; and potential and suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed).

Manageability

The area includes the Maxson Trailhead accessing the Blackcap Trail (non-motorized), the Chamberlain cabin and cow camp, and the adjacent Dusy-Ershim off-highway vehicle route.

Polygon 785 (Florence Lake)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

There are rare and endangered species and habitat. Opportunities for solitude or primitive and unconfined recreation are limited due to high recreation use activities and developments; the Florence Lake Reservoir includes the dam, boat ramps, boats, the Florence Lake store, Jackass Meadows Campground, Florence Lake Road, High Sierra pack station, Jackass administrative site, Hooper Diversion primitive road, trailhead parking areas and day use areas. The lake allows authorized motorized boating and a ferry operates under special use permit, traveling the length of the lake several times a day taking people who are interested in accessing the John Muir Wilderness. Sights and sounds of motorized use penetrate this small polygon. The area is reduced to 340 acres when the lake acreage is removed. A penstock bisects the area which would reduce the acreage further. The area is operated as part of the FERC license to Southern Cal Edison. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 571 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 58 acres.

General Description

This area includes 1,254 acres of timbered and open granite slopes surrounding Florence Lake (including 914 acres of surface water associated with Florence Lake) adjacent to the John Muir Wilderness (Map B-65, Sierra National Forest evaluation map B).

National Vegetation Classification System data, based on the polygon size of 1,254 acres, indicates 46 percent of the area of the polygon (571 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 3 ecological groups with a total area of 58 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is bordered by substantially noticeable development including Florence Lake Reservoir, the dam, boat ramps, the Florence Lake store, Jackass Meadows Campground, Florence Lake Road, High Sierra pack station, Jackass administrative site, Hooper Diversion primitive road, trailhead parking lots and day use areas. The lake allows motorized boating and a ferry under special use permit to travel the length of the lake several times a day taking people who are interested in accessing the John Muir Wilderness. Meadow and riparian condition is moderate. The south lobe of Jackass Meadow is in this unit. It has been affected by changes in hydrology from Florence Dam and historical diversions of Tombstone Creek. The area has had near constant disturbance from human activity. There is a restored sedge bed along Tombstone Creek in Jackass Meadow which was a 2007-2008 restoration project with Southern California Edison.

The area is within the natural range of variation for vegetation communities, with a very small portion affected by fire within the last 20-30 years. Some portions of this area have a heavy dead and down component which could lead to higher than normal fire effects. Contiguous habitat for fisheries and wildlife species exists within the area. The California Department of Fish and Wildlife stock trout in adjacent waterways. Invasive plant species include woolly mullein and bull thistle. The area is closed to commercial cattle grazing. Only pack stock use occurs at Jackass Meadow under a special use permit.

Opportunities for Solitude or Primitive and Unconfined Recreation

There are minimal opportunities for solitude or primitive and unconfined recreation during the summer due to substantial adjacent development including motorized activities. Fishing is the primary non-motorized recreational opportunity in the area. No significant opportunities for challenge and self-reliance exist in the unit.

Other Features of Value

In terms of rare plants in the area, it encompasses parts of two populations of Mono Hot Springs evening primrose (*Camissonia sierrae* ssp. *alticola*) (Forest Service sensitive species).

The following species and habitats are present: potential/suitable habitat for Yosemite toad and potential/suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed).

There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values.

Manageability

The lake allows motorized boating and a ferry under special use permit to travel the length of the lake several times a day taking people who are interested in accessing the John Muir Wilderness. The area is operated as part of the FERC license to Southern Cal Edison.

Polygon 795 (Adjacent to John Muir Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The unit is contiguous to the John Muir Wilderness. Opportunities for solitude or primitive and unconfined recreation in this small unit are limited due to the pervasive sounds from heavily used roads and recreation areas surrounding this polygon. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 111 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 89 acres.

General Description

This area includes 1,206 acres of forested slopes and granite slabs south of the Florence Lake Road and the Ward Tunnel, a hydroelectric penstock (Map B-65, Sierra National Forest evaluation map B). It borders John Muir Wilderness to the south, Ward Tunnel to the west, and Florence Lake Road to the north and east.

National Vegetation Classification System data indicates 9 percent of the area of the polygon (111 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 4 ecological groups with a total area of 89 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

Most of this small area is managed as an inventoried roadless area. The area is within the natural range of variation for vegetation communities, with a very small portion affected by fire within last 20-30 years. Some portions of this area have a heavy dead and down wood component which could lead to higher than normal fire effects. Contiguous habitat for fisheries and wildlife species exists within the area. The California Department of Fish and Wildlife stock trout in adjacent waterways. There is little to no riparian and meadow habitat. Invasive plant species include bull thistle and mullein. The Hot Springs grazing Allotment is not currently active.

The area is surrounded on three sides by Kaiser Pass Road, Florence Lake Road and the Ward Tunnel. There is development associated with Southern California Edison projects adjacent to the area. The Kaiser Pass Road is the only access from the end of State Highway 168 to Florence and Edison Reservoirs. This road is heavily used causing noise to travel across the narrow unit.

Opportunities for Solitude or Primitive and Unconfined Recreation

Motorized traffic is audible and, in some places, visible from this area. The John Muir Wilderness is also bounded by Kaiser Pass Road and Florence Lake Road here and east of this area. There are no official trails in the unit. There are no significant opportunities for visitors to seek challenge or self-reliance in the area. The unit is contiguous to the John Muir Wilderness. Opportunities for solitude or primitive and unconfined recreation in this small unit are limited due to the pervasive sounds from heavily used roads and surrounding recreation sites.

Other Features of Value

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including North Fork Rancheria of Mono Indians, North Fork Mono Tribe, Big Sandy Rancheria of Mono Indians, Picayune Rancheria of Chukchansi Indians, Cold Springs Rancheria of Mono Indians, Dunlap Band of Mono Indians, Bishop Paiute Tribe, Big Pine Paiute Tribe and Native American Organizations like the Mono Nation.

Aquatic species and habitats include potential habitat, suitable habitat, and occupied habitat for Yosemite toad; and potential and suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed).

Manageability

The area is surrounded on three sides by Kaiser Pass Road, Florence Lake Road and the Ward Tunnel. There is development associated with Southern California Edison projects adjacent to the area.

Polygon 797 (Adjacent to John Muir Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area has endangered species and habitat and is adjacent to existing wilderness. There are minimal opportunities for solitude or primitive and unconfined recreation in this polygon due to pervasive sounds from motorized use along roads. However, the boundary area of the neighboring designated wilderness shares these same limitations. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise none of the area. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 20 acres.

General Description

This area includes 1,299 acres of steep forested slopes to the south of the Kaiser Pass road east of the pass. It is contiguous with the John Muir Wilderness (Map B-65, Sierra National Forest evaluation map B).

National Vegetation Classification System data indicates none of the polygon consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 3 ecological groups with a total area of 20 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is within natural range of variation for vegetation communities, with a very small portion affected by fire within last 20-30 years. Some portions of this area have a heavy dead and down component which could lead to higher than normal fire effects. The area is within a vacant cattle allotment. A part of the area near Portal Forebay is used to hold cattle overnight as they are

being driven to the Mono and Cassidy Allotments near Edison. Bull thistle and mullein may occur here. Contiguous habitat for fisheries and wildlife species exist within the area. The California Department of Fish and Wildlife stock trout in waterways. Stream conditions are probably good in Bolsillo, East Fork Camp and Camp 62 Creeks.

The area is bordered on three sides by roads, power lines, Ward Tunnel and developed recreation sites. The Corbett Lake trail crosses this unit. Visitors easily view roads, power lines and developed recreation sites.

Opportunities for Solitude or Primitive and Unconfined Recreation

The Corbett Lake trail (non-motorized) crosses this unit. Motorized traffic is audible and, in some places, visible from this area. There is one hiking and equestrian trail leading to Corbett Lake. There are minimal opportunities for solitude or primitive and unconfined recreation in this polygon due to pervasive sounds from motorized use along roads.

Other Features of Value

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including North Fork Rancheria of Mono Indians, North Fork Mono Tribe, Big Sandy Rancheria of Mono Indians, Picayune Rancheria of Chukchansi Indians, Cold Springs Rancheria of Mono Indians, Dunlap Band of Mono Indians, Bishop Paiute Tribe, Big Pine Paiute Tribe and Native American organizations like the Mono Nation.

Aquatic species and habitats include potential habitat, suitable habitat, occupied habitat, and proposed critical habitat for Yosemite toad; and potential and suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species listed).

Manageability

The area is bordered on three sides by roads, power lines, Ward Tunnel and developed recreation sites.

Polygon 815 (Edison Lake)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Opportunities for solitude or primitive and unconfined recreation are limited due to an extensive network of authorized forest system roads around the perimeter. The area also has high recreation use, including developed recreation sites, Vermillion Valley Resort, Lake Edison, High Sierra Pack Station and the authorized Onion Springs Primitive Road that bisects a section of the area. Currently, there is authorized motorized boating and a ferry operates under a special use permit, traveling the length of the lake several times a day taking people who are interested in accessing the John Muir Wilderness. Sights and sounds of motorized use penetrate this small polygon. This polygon does not present an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise less than 100 acres.

General Description

This area includes 3,887 acres in the vicinity of Lake Edison (Map B-65, Sierra National Forest evaluation map B). The acreage includes 1,818 acres of surface water for Lake Edison.

National Vegetation Classification System data indicates 12 percent of the area of the polygon (484 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. There is less than 100 acres comprised of ecological groups that have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is within natural range of variation for vegetation communities, with a very small portion affected by fire within last 20-30 years. Some portions of this area have a heavy dead and down component which could lead to higher than normal fire effects. There are a few meadows toward the north of the unit, one looks very dry and the other may be a fen. Mostly the area is dry. Fire suppression, grazing and fish stocking are present at Lake Edison. Contiguous habitat for fisheries and wildlife species exists within the area. The California Department of Fish and Wildlife stock trout in reservoirs and waterways.

The area is adjacent to substantially noticeable development including Lake Edison, developed recreation sites and roads. The lake allows motorized boating and a ferry under special use permit that travels the length of the lake several times a day taking people who are interested in accessing the John Muir Wilderness. The area is within an active grazing allotment (Mono Allotment). Invasive plants include cheat grass, bull thistle, and woolly mullein.

Opportunities for Solitude or Primitive and Unconfined Recreation

Hiking and riding trails pass through this area to access the Ansel Adams Wilderness. The lake allows motorized boating and a ferry under special use permit that travels the length of the lake several times a day taking people who are interested in accessing the John Muir Wilderness. There are no significant opportunities for visitors to seek challenge and risk in this unit. There are limited opportunities for solitude or primitive and unconfined recreation due to extensive adjacent development including Vermillion Valley Resort, Lake Edison, High Sierra Pack Station and Onion Springs primitive road that bisects a section of the area.

Other Features of Value

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including North Fork Rancheria of Mono Indians, North Fork Mono Tribe, Big Sandy Rancheria of Mono Indians, Picayune Rancheria of Chukchansi Indians, Cold Springs Rancheria of Mono Indians, Dunlap Band of Mono Indians, Bishop Paiute Tribe, Big Pine Paiute Tribe and Native American organizations like the Mono Nation. There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values.

Aquatic species and habitats include potential habitat, suitable habitat, occupied habitat, and proposed critical habitat for Yosemite toad; and potential habitat, suitable habitat, and proposed critical habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed).

Manageability

There is authorized motorized boating and a ferry operates under a special use permit, traveling the length of the lake several times a day taking people who are interested in accessing the John Muir Wilderness.

Polygon 819 (San Joaquin River – Adjacent to Ansel Adams Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

This is a large narrow unit with one small authorized motorized trail area. Opportunities for solitude or primitive and unconfined recreation are limited in the small area with authorized motorized trails; sights and sounds penetrate this small area.

The portion of the area between the Kaiser and Ansel Adams Wildernesses has desirable wilderness characteristics due to the connection it provides between the two wildernesses. However, the appearance of naturalness was somewhat impacted recently by the extensive fire suppression activities.

Opportunities for solitude are limited in the area around Mammoth Pool. Much of the northern section surrounds Mammoth Pool and is what people see when recreating at the reservoir. The area around Mammoth Pool is within sight and sound of motorized boats on the lake and the area includes the China Bar Campground, a popular boating destination. Major hydropower infrastructure is visible from a portion of the area in the San Joaquin River Canyon.

This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 2,065 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise an additional 22,370 acres.

General Description

This area includes 37,528 acres located around the San Joaquin River Canyon and the forested area between the eastern Kaiser Wilderness and the southern Ansel Adams Wilderness (Map B-65, Sierra National Forest evaluation map B). The acreage includes 1,017 acres of surface water for Mammoth Pool Reservoir. Elevations range from 2,400 to 8,700 feet.

National Vegetation Classification System data, based on the polygon size of 37,528 acres, indicates 6 percent of the area of the polygon (2,065 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is inter-mountain basins big sagebrush shrubland. This polygon also contains 8 ecological groups with a total area of 22,370 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California lower montane blue oak-foothill pine woodland, Mediterranean California mixed oak woodland, Mediterranean California mesic mixed conifer forest and woodland, Great Basin juniper woodland, and Northern and Central California dry-mesic chaparral.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

This area consists of steep timber and brush slopes. The dominant cover type is Sierra mixed conifer interspersed with montane hardwood and ponderosa pine. The area covers several active cattle allotments where grazing occurs June through September. The California Department of Fish and Wildlife stock trout in reservoirs and waterways. There are only a few meadows. The northern portion of area is not within the natural range of variation for vegetation community. The southern portion of area was affected by the 2014 French Fire and the 2013 Aspen Fire. Extensive fire suppression impacts are visible from this area, notably from the Aspen Fire north of Stump Springs Road. Subsequent logging and reforestation has occurred since the fire.

There are water impoundment and hydropower infrastructure. The unit is bounded by Forest Service Road 4S81 and a penstock on the west and Stump Springs road on the east. On the south boundary are power lines and the town of Big Creek and the California Riding and Hiking Trail cuts across the southern tip of the eastern portion. On the north is National Forest System land, including the Ansel Adams Wilderness. The area is bisected by the San Joaquin River including Mammoth Pool Reservoir.

Opportunities for Solitude or Primitive and Unconfined Recreation

Opportunities for solitude or primitive and unconfined recreation are limited in the area around Mammoth Pool. Much of the northern section surrounds Mammoth Pool and is what people see when recreating at the reservoir. The area around Mammoth Pool is within sight and sound of motorized boats on the lake and China Bar Campground. Major hydropower infrastructure is visible from a portion of the area in the San Joaquin River Canyon.

Primitive recreation includes hiking and horseback riding on a few infrequently maintained trails. The area does not present significant opportunities for challenge and self-reliance, other than hiking on steep terrain. Downstream from the hydropower infrastructure is a popular noncommercial river rafting area. Boating occurs during downstream water releases, and upwards of 100 people raft the river on those days.

Opportunities for solitude or primitive and unconfined recreation are limited in the area with authorized motorized trails; sights and sounds penetrate this small area.

Other Features of Value

This area is culturally sensitive and is considered a special interest area from Tribes in the area including: North Fork Rancheria of Mono Indians, North Fork Mono Tribe, Big Sandy Rancheria of Mono Indians and Picayune Rancheria of Chukchansi Indians. There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values.

The following species and habitats are present: potential/suitable for Yosemite toad and Sierra Nevada yellow-legged frog (Endangered Species Act listed); potential habitat for western pond turtle, potential habitat for foothill yellow-legged frog (Forest Service sensitive species). Peregrine falcon are found in the Fuller Buttes area.

Manageability

Part of the area has potential to be managed for preservation of wilderness character in the portion providing connectivity between Ansel Adams and Kaiser Wildernesses, defined on the north by Crater Lake Meadow and on the south by Kaiser Pass Road with limited accessibility.

Polygon 820 (Piyau Dome – Adjacent to Ansel Adams Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area has a rare plant and the plant communities are predominantly native and not impacted by current activities. Opportunities for solitude or primitive and unconfined recreation are limited due to a paved road and an extensive network of authorized forest system roads along the perimeter of this small polygon. Sights and sounds of motorized are likely pervasive throughout the area. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 709 acres.

General Description

This area consists of 1,741 acres of conifer forest in the vicinity of Piyau Dome adjacent to the Ansel Adams Wilderness and is long and narrow (Map B-65, Sierra National Forest evaluation map B).

National Vegetation Classification System data indicates 15 percent of the area of the polygon (260 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 5 ecological groups with a total area of 709 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

There are very few meadows and riparian areas in this polygon conditions. Timber harvest has occurred in the area. The area is bordered by a scenic byway to the east and a network of forest system roads. One road provides accesses to a trailhead and the trail provides wilderness access. The area is currently grazed as part of South Jackass Allotment with 116 cow-calf pair permitted from June 16 through September 3. Contiguous habitat for fisheries and wildlife species exists within the area. Invasive plant species include scattered bull thistle and woolly mullein. The area is within the natural range of variation for vegetation community, with a very small portion affected by fire within last 20-30 years. There are no known overall significant impacts to species populations. It does not appear that California Department of Fish and Wildlife stock trout in adjacent waterways. Feral pigs may be a concern for elevations below 2,500 feet elevation.

Opportunities for Solitude or Primitive and Unconfined Recreation

The area is adjacent to the Ansel Adams Wilderness with a trailhead accessing Forest Service Road 26E38 which is the Miller Creek Trail that starts at the Minarets Pack Station and then ties

to Cassidy Trailhead at Forest Service Road 5S84. Cassidy Meadow Trail (26E23) connects Miller's Crossing trail (26E63) to the California Riding and Hiking Trail.

Opportunities for solitude or primitive and unconfined recreation are limited due to the paved scenic byway and an extensive network of authorized forest system roads along the perimeter of this small polygon. Sights and sounds penetrate this small area.

Other Features of Value

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including North Fork Rancheria of Mono Indians and North Fork Mono Tribe. There are cultural and historical sites adding to the wilderness characteristics of this area by providing important scientific and cultural values. Aquatic species and habitats include potential and suitable habitat for Yosemite toad and potential and suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed). There is one known population of Yosemite lewisia on Piyah (Squaw) Dome. There are no research natural areas or other special interest areas.

Manageability

The area is bounded by a scenic byway on the east and a road on the north that accesses a trailhead providing wilderness access. The boundary toward the scenic byway may not be well-defined topographically.

Polygon 821 (Mount Raymond)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

The area is bordered by the South Fork of the Merced Wild and Scenic River and presents opportunities for personal challenge and self-reliance typically associated with recreational activities. There are opportunities for solitude or primitive and unconfined recreation. Although most of the area is within an inventoried roadless area, a forest system road provides access to private property in the eastern portion and there are two areas of authorized motorized trails within the unit, which include Star Lakes and the Red Top motorized trails. Opportunities for solitude or primitive and unconfined recreation are limited in areas of authorized motorized trails and authorized motorized access to private property and mines. Sights and sounds penetrate these motorized areas. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 2,082 acres.

General Description

Located south of Yosemite National Park, this 13,370 acre area is partially divided by private property, the Red Top motorized trail and other forest roads (Map B-64, Sierra National Forest evaluation map A and Map B-65, evaluation map B). Elevation in this area is from 5,100 feet to 9,000 feet.

National Vegetation Classification System data indicates less than 1 percent of the area of the polygon consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 5 ecological groups with a total area of 2,082 acres which have less than 20 percent of their national

extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California Mesic Mixed Conifer Forest and Woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area is characterized by timbered slopes dropping to the South Fork of the Merced River on the west and the lower slopes of Red Top and Madera Peaks to the east. There are several large lakes and meadows and rich old-growth forests of mixed conifer and fir with areas of barren rock and montane chaparral. Most of the unit is within an inventoried roadless area. Contiguous habitat for fisheries and wildlife species exist within the area. Meadow and riparian conditions are mostly good, although some areas have grazing and trampling impacts. There are dense conifer forests in steep, rocky terrain with a heavy dead and down fuel component. This fuel loading is continuous enough to allow a “path” for a fire to travel from the Sierra National Forest to Yosemite National Park, with a moderate potential to affect the community of Wawona. Fires here mainly travel by rolling material, with subsequent upslope runs. Heavy fuels allow for greater distance spotting potential.

The polygon is currently part of two active allotments (Iron Creek and Mugler allotments). The allotments are currently grazed with 160 and 209 cow-calf pair, respectively, from June 15 through September 30. Invasive plant species include bull thistle and woolly mullein. Past timber harvest is evident in the eastern portion that is bordered by Beasore Vista Road. Feral pigs may be a concern for elevations below 2,500 feet in elevation. California Department of Fish and Wildlife stock trout in adjacent waterways and in lakes present in this unit. The Star Lakes motorized trail was originally constructed to access the Star Mine. The Star Mine, also called the Yellow Jacket Mine, is a tungsten mine that began in 1946. There is private property with road access on the edges of the area. Six trails cross through the area and access Yosemite National Park.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational opportunities include hiking, horseback riding, fishing, off-highway vehicles, hunting, camping, and sightseeing. Six hiking trails cross through the area and access Yosemite National Park. There are commercial uses by the Yosemite Trails pack station in Biledo Meadow with structures at this site. Opportunities for solitude are generally high elsewhere due to inaccessibility. The area presents opportunities for personal challenge and self-reliance typically associated with these recreational activities. There are opportunities for solitude or primitive and unconfined recreation.

Although most of the area is within an inventoried roadless area, a forest system road provides access to private property in the eastern portion and there are two authorized motorized trails within the unit, Star Lakes and the Red Top motorized trails. Opportunities for solitude or primitive and unconfined recreation are limited in areas of authorized motorized trails and authorized motorized access to private property and mines.

Other Features of Value

There are several meadows with fens (peat lands) present. No rare plants are known. There are no research natural areas or botanical special interest areas present. This area is culturally sensitive and is considered a special interest area from Tribes in the area, including the American Indian Council of Mariposa (Southern Sierra Miwuk Nation), North Fork Rancheria of Mono Indians and North Fork Mono Tribe. Aquatic species and habitats include potential habitat, suitable

habitat, occupied habitat, proposed critical habitat for Yosemite toad; and potential and suitable habitat for Sierra Nevada yellow-legged frog (federally listed).

Manageability

Most of this area is managed as an inventoried roadless area. The area would be very manageable as wilderness with the boundary of the South Fork of the Merced Wild and Scenic River to serve as an anchor for this wilderness.

Polygon 822 (Adjacent to Ansel Adams Wilderness)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Naturalness, undeveloped quality and opportunities for solitude or primitive and unconfined recreation are generally intact. The area has great vistas, access to lakes, existing trails and endangered species and habitat. The motorized area near Mammoth Trailhead has limited opportunities for solitude or primitive and unconfined recreation. Sights and sounds penetrate this small area. Once the area is reshaped to remove existing motorized trails, it is suitable for inclusion in the National Wilderness Preservation System. This polygon presents a limited opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise a low number of acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise 1,324 acres.

General Description

Polygon 822 is a 10,581-acre area along the southern border of the Ansel Adams Wilderness (Map B-65, Sierra National Forest evaluation map B).

National Vegetation Classification System data indicates 3 percent of the area of the polygon (367 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 5 ecological groups with a total area of 1,324 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent is Mediterranean California mesic mixed conifer forest and woodland.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

There are several large lakes and meadows and rich old-growth forests of pine and fir. Six trails cross through the area and access Yosemite National Park. The vistas from Cattle Mountain and Green Mountain are excellent. Clover Meadow is located in the center of this horseshoe shaped polygon. There are two motorized trails at the edge of the established wilderness boundary near Mammoth Trailhead; Green Mountain and Cattle Mountain motorized trails bisect the polygon into two nonmotorized areas. There are many recreation developments along the border: 3 campgrounds, 4 trailheads, 2 vista points along the scenic byway and 1 corral. A majority of these developments support access to the wilderness. A paved access road and several cherry stem forest system roads shape the polygon into varying widths.

Conifer stands are located in steep, rocky terrain with a heavy dead and down fuel component. This fuel loading is continuous enough to allow a “path” for a fire to travel from Forest Service to National Park Service with a moderate potential to affect the community of Wawona. Fires here mainly travel by rolling material, with subsequent upslope runs. Heavy fuels allow for greater distance spotting potential. This area is currently part of two active grazing allotments (Iron Creek and Mugler). Invasive plant species include scattered patches of bull thistle and woolly mullein. The area is primarily granitic rock and open gravelly and sandy areas associated with rocky areas. California Department of Fish and Wildlife stock trout in adjacent waterways and in lakes present in this unit. Contiguous habitat for fisheries and wildlife species exist within the area.

Opportunities for Solitude or Primitive and Unconfined Recreation

Recreational opportunities include hiking, horseback riding, fishing, hunting, camping and sightseeing. The area presents opportunities for personal challenge and self-reliance typically associated with these recreational activities. Overall there are opportunities for solitude or primitive and unconfined recreation due to inaccessibility. There is private property near the northern section with a cherry stem road heading further north to access the Hole Trail that ties to a trail to access Yosemite. The private property has had past discussions regarding new development. There are two motorized trails at the edge of the established wilderness boundary near Mammoth Trailhead; Green Mountain and Cattle Mountain motorized trails bisect the polygon into two nonmotorized areas. These motorized areas near Mammoth Trailhead have limited opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

There are several meadows with fens (peat lands) present. This area is culturally sensitive and is considered a special interest area from Tribes in the area, including the American Indian Council of Mariposa (Southern Sierra Miwuk Nation), North Fork Rancheria of Mono Indians and North Fork Mono Tribe. There are cultural and historic sites adding to the wilderness characteristics of this area by providing important scientific and cultural values. Aquatic species and habitats include potential habitat, suitable habitat, occupied habitat, and proposed critical habitat for Yosemite toad and potential and suitable habitat for Sierra Nevada yellow-legged frog (Endangered Species Act listed).

Manageability

The area would be manageable for preservation of wilderness characteristics due to its adjacency to the Ansel Adams Wilderness, except in the area of two authorized motorized trails that bisect the polygon into two nonmotorized areas.

Polygon 1378 (Adjacent to John Muir and Monarch Wildernesses)

Summary of Potential Suitability for Inclusion in the National Wilderness Preservation System

Large portions of the area might be suitable for inclusion in the National Wilderness Preservation System due to relatively intact wilderness qualities and rugged terrain limiting access. Large blocks of the unit are unaffected by human activity. There are old-growth forests, rare plants and endangered aquatic species and habitat in the area. The areas of authorized motorized trails and forest system roads that are open to the public have limited opportunities for solitude or primitive

and unconfined recreation. There is a need to reshape the unit to avoid these existing motorized activities.

This polygon presents an opportunity to protect ecological groups that may be minimally represented in the National Wilderness Preservation System. Ecological groups with less than 5 percent of their national extent in the National Wilderness Preservation System comprise 670 acres. Ecological groups with between 10 and 20 percent of their national extent in the National Wilderness Preservation System comprise an additional 22,425 acres.

General Description

This polygon crosses the forest boundary between the Sequoia National Forest and the Sierra National Forest (Map B-66, Sierra National Forest evaluation map C). The polygon was evaluated as one whole unit, with 14,609 acres on the Sequoia National Forest and 57,364 acres administered by the Sierra National Forest. This 71,974 acre area is bounded on the north by Rogers Ridge, on the east by Deer Ridge and the Monarch Wilderness, on the south by a network of cherry stemmed roads in the Sequoia National Monument, and on the west by the boundary of the Kings River Special Management Area and the western boundary of the Sequoia National Monument. There are roads and motorized trails providing corridors within the unit. The area includes the 49,000-acre Kings River Special Management Area and an area of the northern portion of the Sequoia National Monument (Converse Basin to McKenzie Ridge).

Overall vegetation includes steep slopes of brush and wooded slopes, rising steeply out of the river canyons with vegetation transitions from chaparral through oak-conifer to mixed conifers at higher elevations. National Vegetation Classification System data, based on the polygon size of 71,974 acres, indicates 1 percent of the area of the polygon (670 acres) consists of ecological groups that have less than 5 percent of their national extent protected in the National Wilderness Preservation System. This polygon also contains 8 ecological groups with a total area of 22,425 acres which have less than 20 percent of their national extent protected in the National Wilderness Preservation System. The most prevalent are California Central Valley mixed oak savanna, California lower montane blue oak-foothill pine woodland, Mediterranean California mixed oak woodland, Mediterranean California mesic mixed conifer forest and woodland and Northern and Central California dry-mesic chaparral.

Wilderness Characteristics

Degree the Area Generally Appears to be Affected Primarily by the Forces of Nature

The area was noted for its significant old-growth forest in the Sierra Nevada Ecosystem Project Report. The overall character of the area appears natural despite the impacts from recreation use, developments and historic logging. Large blocks of the unit are unaffected by human activity and the steep terrain limits access. Much of the area is rarely visited and existing trails are overgrown with brush.

The area north of the Spanish Lakes motorized trail is within the Collins Allotment which is currently grazed by 130 cow-calf pair from June through September. The area between the Spanish motorized trail and the Kings River is not currently within any active allotments. The area south of the Kings River has three grazing allotments: Sampson with up to 200 cow-calf pair, Hoist with 100 cow-calf pair, and Converse with up to 125 cow-calf pair. Invasive plant species include annual grasses.

A very small portion affected by fire within the last 20-30 years. Some portions of this area have a heavy dead and down component which could lead to higher than normal fire effects. Steep and rocky canyons contribute to rapid fire spread and high intensity fire effects. Fires in this area have the potential to become large and aggressive suppression may be needed. Portions of this watershed are typically soil-based rather than rock-based, and often experience intense winter rain storms. Following a fire, it is anticipated that extreme sediment loads will be experienced in the downstream water ways.

The area within the Converse Basin to McKenzie Ridge and outside of the Kings River Special Management Area was considerably modified by historic timber harvest from the mid-1800s to early 1900s. Most Giant sequoias were removed during this time and the area has many plantations. Many of the old logging roads have been incorporated into a system for motorized routes for off highway vehicles. There are several popular interpretive sites.

There are major developments in the unit. There are communications sites and range improvements such as fences, corrals and water troughs occur near some water sources in the area. Several historic guard cabins are present. There is one storage building under special use permit, and trailheads and campgrounds are concentrated along the Kings River. There are several interpretive sites and trailheads in the area outside of the Kings River Special Management Area. Motorized and hiking trails are present in the area. There are several motorized trails including the Spanish and several motorized trails in the Kings River Special Management Area south of the Kings River, and a system of motorized routes in the area outside of the Kings River Special Management Area.

Opportunities for Solitude or Primitive and Unconfined Recreation

Developed and dispersed recreation activities include hiking, horseback riding, off-highway vehicle use, rafting, kayaking, hunting, camping and sightseeing. Given the steepness of the topography there is minimal recreational use on steeper slopes. Potential encounters with other visitors are low throughout most of the area. Use is primarily confined to trails within the area, with concentrations of use along roads at the boundaries or cherry stems. There are opportunities for challenge and self-reliance in this area along the Kings River and travelling off-trail through steep rugged terrain. The area has high opportunities for solitude or primitive and unconfined recreation due to its large size, although any public use is focused on the few existing trails and the Kings River.

The area south of the Kings River and outside of the Kings River Special Management Area has little opportunity for solitude because of high visitor volume created from the close proximity to popular national parks, objects of interest in the Monument, and off highway vehicle use in this area. Primitive opportunities are intermixed with more developed recreation opportunities with motorized access. There are two small communities and some private property at the edge of the unit. In times of active fire suppression, the number of helicopters coming and going out of the nearby heliport could be disruptive to visitors. The areas of authorized motorized trails and forest system roads that are open to the public located within the polygon have limited opportunities for solitude or primitive and unconfined recreation.

Other Features of Value

The area includes the congressionally designated Kings River Special Management Area and the Kings Wild and Scenic River. Native species have connectivity and habitat in the areas away from

human impacts. All of the area south of the Kings River is also in the Giant Sequoia National Monument.

There is a rare plant, the Kings River buckwheat (*Eriogonum nudum* var. *regirivum*) on limestone and marble outcrops (Forest Service sensitive species). Some meadows north of the Spanish off highway vehicle route may have fen ecosystems.

Aquatic species and habitats include potential habitat, suitable habitat, occupied habitat and proposed critical habitat for Yosemite toad; potential and suitable habitat for Sierra Nevada yellow-legged frog and California red-legged frog (Endangered Species Act listed); potential and suitable habitat and occupied habitat for western pond turtle; and potential habitat for foothill yellow-legged frog (Forest Service sensitive species).

This area is culturally sensitive and is considered a special interest area from Tribes in the area, including Cold Springs Rancheria of Mono Indians, Big Sandy Rancheria of Mono Indians, Dunlap Band of Mono Indians and Tule River Indian Reservation and the Haslett Basin Traditional Committee (Holkoma Mono).

Manageability

Much of the area is manageable for preservation of wilderness characteristics due to its larger size and rugged terrain. Reshaping the area to avoid motorized trails within the unit and cherry stemmed roads would be necessary. The inclusion of this unit into the wilderness system would protect the audible sounds from flights.

Description of the Wilderness Recommendation Process

Relationship to the Forest Plan Revision Process

As part of the land management plan revision process, Sequoia and Sierra National Forest personnel are required to “identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System (NWPS), and determine whether to recommend any such lands for wilderness designation” (Title 36, Code of Federal Regulations, Part 219.7(v)).

The process used to identify and evaluate lands is found in the Forest Service Handbook 1909.12-2015-1, chapter 70 – Wilderness (Wilderness Recommendation Handbook). The Wilderness Recommendation Handbook contains Forest Service guidance and instruction on how to carry out the direction contained in 36 CFR section 219.7(v). It includes the November 15, 2013 Federal Advisory Committee recommendations on the chapter 70 wilderness inventory and evaluation process.

The process occurs in four primary steps: inventory, evaluation, analysis, and recommendation. Each step requires public participation.

The inventory step identifies all lands in the plan area that may be suitable for inclusion in the National Wilderness Preservation System using the criteria in Section 71 of the Wilderness Recommendation Handbook.

The evaluation step examines the wilderness characteristics of lands in the inventory using the criteria in section 72 of the Wilderness Recommendation Handbook.

The analysis step further analyzes the effects of recommending wilderness designations for evaluated areas or portions thereof that are included in one or more of the plan alternatives.

The recommendation step concludes the process with documenting the forest supervisor’s decision and identifying which areas, if any, are recommended for inclusion in the National Wilderness Preservation System. The recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. The Congress has reserved the authority to make final decisions on wilderness designation. Plan implementation is not dependent upon subsequent action related to recommendations for wilderness designation.

Not all lands included in the inventory and subsequent evaluations are required to be analyzed as potential recommended wilderness. Inclusion in the inventory or one or more alternatives not selected is not a designation that conveys or requires a particular kind of management. Areas that are not recommended for wilderness are available for inclusion in other management areas in the forest plan.

Inventory

The inventory process includes: a) preparation of a preliminary inventory map; b) public input on the preliminary inventory map; c) preparation of a final inventory map that incorporates public input and corrects mapping errors.

Preliminary Inventory Map

For the Sequoia and Sierra National Forests, Forest Service staff developed a preliminary inventory map of undeveloped areas that may have wilderness characteristics using the three sets of criteria identified in the Wilderness Recommendation Handbook: roads improvements, other improvements, and minimum size. Forest Service staff completed the following:

1. Identified all lands that met the roads improvements criteria, as outlined in chapter 70, 71.22(a). Roads improvements data was developed through the travel management planning process on each national forest. The objective maintenance level of each road was used. The Forest Service analysis of roads improvements incorporated the travel planning process on the Sierra National Forest and the travel management decisions on the Sequoia National Forest. The undeveloped areas on the preliminary inventory map were unroaded, contained decommissioned or unauthorized routes, or contained objective maintenance level 1 roads. Motorized trails were included in the preliminary inventory because they met the Wilderness Recommendation Handbook's definition of unroaded.
2. Excluded lands that met the roads improvements criteria but had less than half a mile across between roads. These areas are not of sufficient size to make their preservation and use in an unimpaired condition practicable.
3. Excluded lands that met the roads improvements criteria but had "power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structures," as outlined in chapter 70, 71.22(b)(9). The Wilderness Recommendation Handbook allows areas with other types of improvements, such as timber harvest areas, historic mining areas or range improvements, to be included in the inventory as long as they are not substantially noticeable.
4. Created a draft preliminary inventory map based on the above steps, identifying polygons in the following categories:
 - a. Areas 5,000 acres or greater
 - b. Areas less than 5,000 acres and noncontiguous to existing designated wilderness, primitive areas, or recommended wilderness on both National Forest System lands and adjacent lands of other Federal ownership
 - c. Areas between 1,000 and 4,999 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership
 - d. Areas less than 1,000 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership
5. Included all areas 5,000 acres or greater (chapter 70, 71.21(1)).
6. Included areas between 1,000 and 4,999 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership (chapter 70, 71.21 (3)).
7. Reviewed areas less than 5,000 acres and noncontiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and lands of other Federal ownership. National forest personnel excluded these areas

- because they were not of sufficient size to make their preservation and use in an unimpaired condition practicable (chapter 70, 71.21(3)).
8. Reviewed areas less than 1,000 acres and contiguous to existing designated wilderness, primitive areas, or recommended wilderness on National Forest System lands and on lands of other Federal ownership. Most of these areas were very small and oddly shaped and had been purposefully excluded from previous Congressional wilderness designations. These areas were excluded unless the national forest personnel determined they were practicable additions in shape and size.
 9. Excluded improvements in the polygons that did not meet the criteria in chapter 70, 71.22(b).
 10. Updated preliminary inventory maps based on the above steps.

The preliminary inventory maps of lands that may be suitable for inclusion in the National Wilderness Preservation System for both forests can be viewed or downloaded at the following websites:

- Sequoia National Forest:
http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3804514.jpg
- Sierra National Forest:
http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3804525.jpg

The maps display two categories of areas that are part of the preliminary inventory: (1) Preliminary inventory, greater than 5,000 acres, and (2) Preliminary inventory, 1,000 to 5,000 acres, contiguous. These areas represent undeveloped lands that may have wilderness characteristics because they meet the size criteria, improvements criteria, and roads improvements criteria. The maps also display two categories of areas that were considered in, but eventually excluded from, the preliminary inventory as described in the steps above.

Table B-8 provides the preliminary number of acres that meet the wilderness inventory criteria, the number of acres that did not meet the wilderness inventory criteria, and the total undeveloped acres considered in the preliminary inventory.

Table B-8. Preliminary wilderness inventory acres for the Sequoia National Forest and the Sierra National Forest

Preliminary Inventory Category	Sequoia National Forest Acres	Sierra National Forest Acres
Meet wilderness inventory criteria	535,046	312,840
Did not meet wilderness inventory criteria	134,195	204,317
Total undeveloped area considered in preliminary wilderness inventory	669,241	517,157

Public Input on the Preliminary Inventory Map

Forest Service personnel posted the preliminary inventory map (map version 3.1, dated June 4, 2014) for each national forest to the Pacific Southwest Region's planning website on June 4, 2014 (<http://www.fs.usda.gov/detail/r5/landmanagement/planning/?cid=STELPRD3803608>). During a public workshop and tribal forum held on each national forest in mid-June, the preliminary inventory maps were introduced, and the public was invited to provide input on the maps through

June 30, 2014. The tools used to inform the public about the upcoming workshops were news releases to individuals and the media, emails to parties on the schedule of proposed actions database list, radio spots, and the Pacific Southwest Region's planning website.

Public input also included a comprehensive citizen-developed inventory of areas that may be suitable for inclusion in the National Wilderness Preservation System. The citizen inventory included a total of 332,199 acres on the Sequoia National Forest, 258,050 acres on the Sierra National Forest, for a total of 590,249 acres.

Final Inventory Map

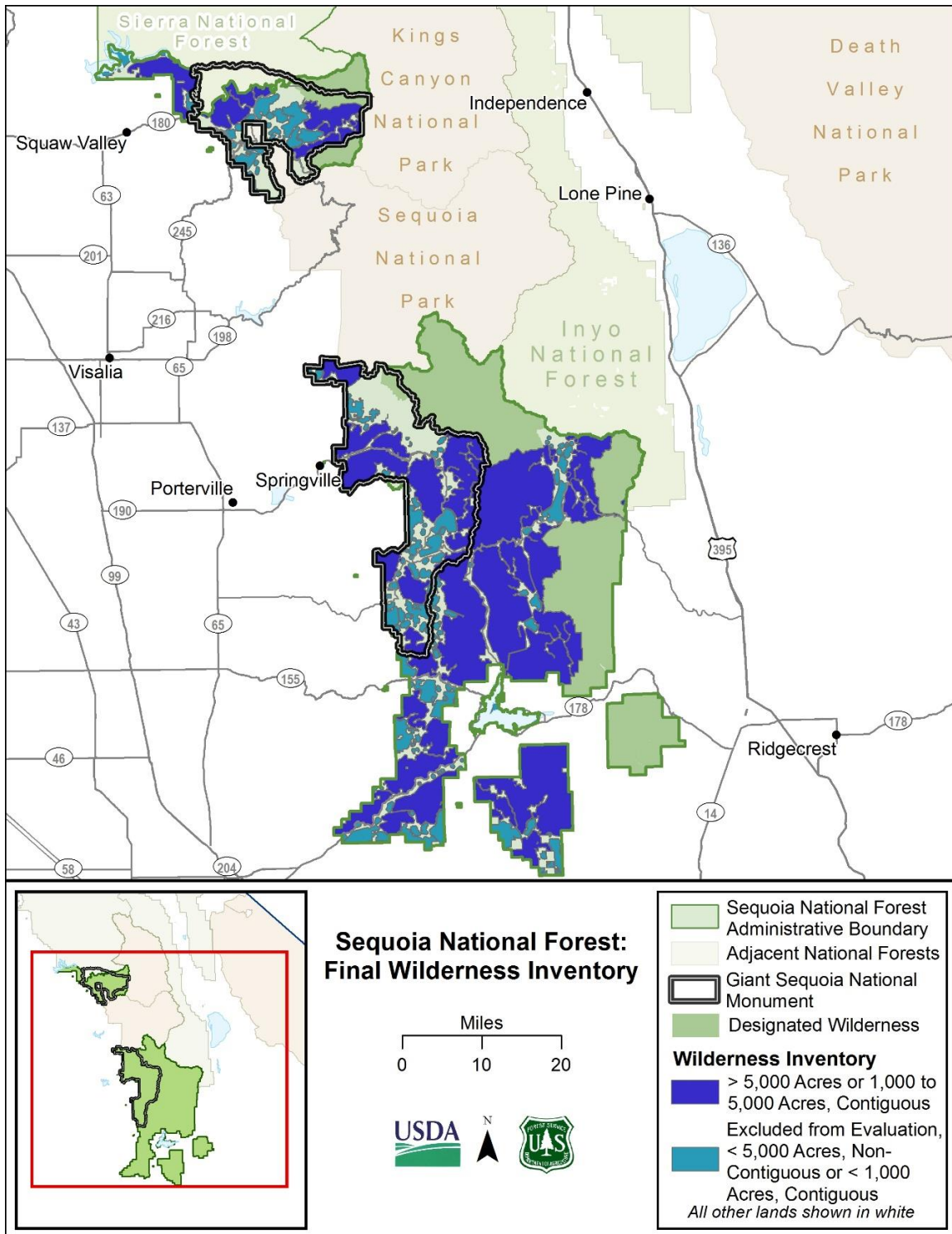
The final inventory maps (map version 4.1, dated August 29, 2014) incorporated the following adjustments after reviewing the citizen-developed inventory and other public input:

- Fixed mapping errors.
- The results of the Sequoia National Forest travel analysis process were incorporated which corrected several errors and reduced the number of acres determined to meet size criteria. Travel analysis information was not available at the time the preliminary map was completed.
- The citizen-developed inventory was reviewed by the staff at each national forest. Of the 590,249 total acres in the citizen inventory, 498,189 acres were consistent with what Forest Service staff identified. The areas that were not consistent with the Forest Service inventory did not meet the inventory criteria and were not included in the final inventory. On the Sequoia National Forest, 89 percent of the citizen inventory was included. On the Sierra National Forest, 84 percent of the citizen inventory was included.

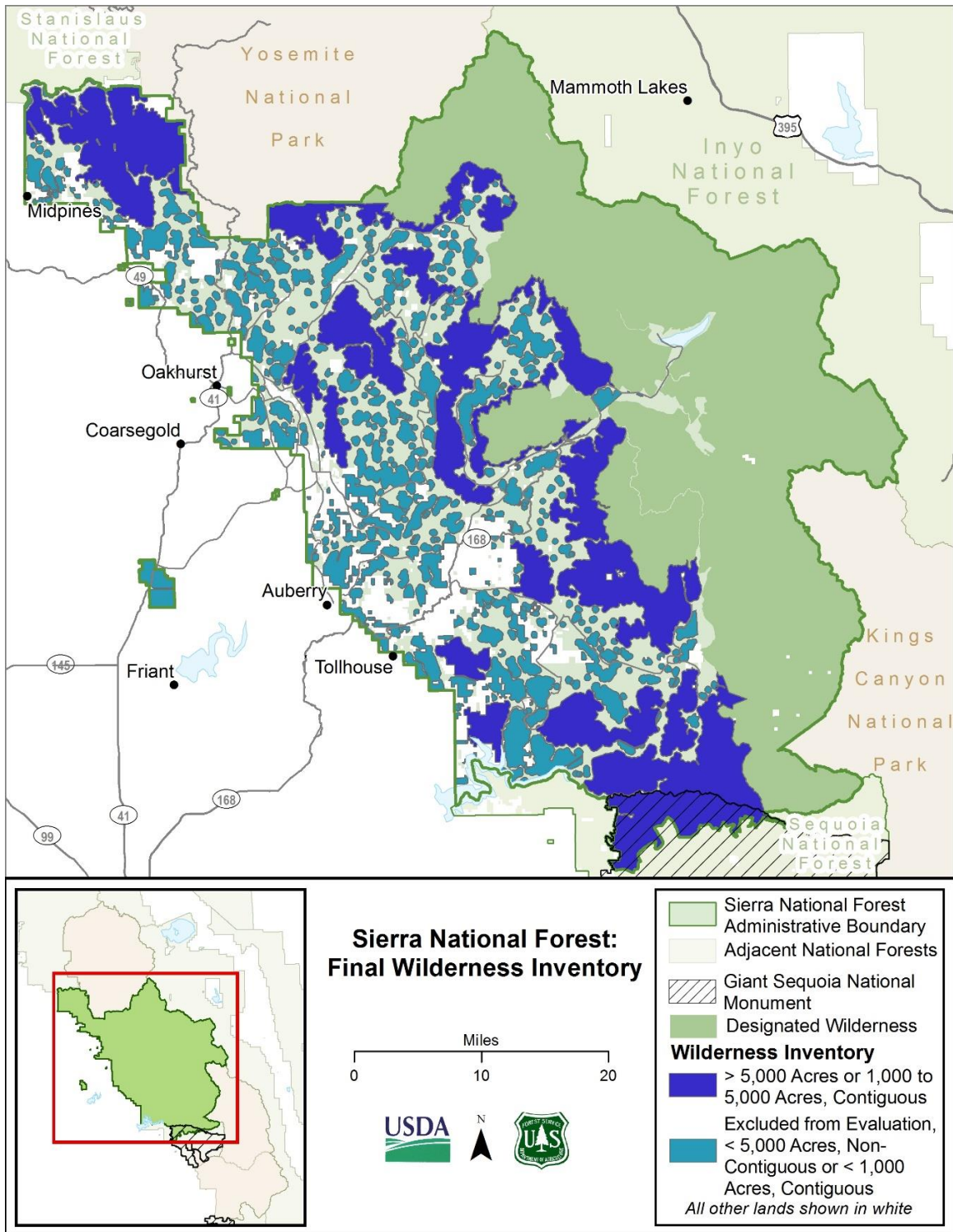
The final inventory maps (Map B-67 and Map B-68) display two categories of areas:

- Greater than 5,000 acres or 1,000 to 5,000 acres and contiguous with designated wilderness. These areas represent undeveloped lands that may have wilderness characteristics because they meet the size criteria, improvements criteria, and roads improvements criteria.
- Excluded from evaluation, less than 5,000 acres and non-contiguous or less than 1,000 acres and contiguous.

Table B-9 provides the final number of acres that meet the wilderness inventory criteria, the number of acres that did not meet the wilderness inventory criteria, and the total undeveloped acres considered in the final inventory. The final inventory dataset and the dataset used for the evaluation (see "Evaluation" section) are the same except for some small corrections made in the evaluation dataset after the final inventory was completed. For this reason, there are some small discrepancies between the acreage totals shown here and those calculated for the evaluation dataset.



Map B-67. Sequoia National Forest Final Wilderness Inventory map



Map B-68. Sierra National Forest Final Wilderness Inventory map

Table B-9. Final inventory acres for the Sequoia National Forest and Sierra National Forest

Final Inventory Category	Sequoia National Forest Acres	Sierra National Forest Acres
Meet wilderness inventory criteria	528,860	312,840
Did not meet wilderness inventory criteria	134,315	204,317
Total undeveloped area considered in preliminary wilderness inventory	663,175	517,157

Table B-10 provides the details related to the final number of areas that meet the wilderness inventory criteria, the areas that did not meet the wilderness inventory criteria.

Table B-10. Final inventory area details for the Sequoia National Forest and Sierra National Forest

Final Inventory Details	Sequoia National Forest	Sierra National Forest
# of areas that meet wilderness inventory criteria, larger than 5,000 acres	28	16
# of areas that meet wilderness inventory criteria, between 1,000 and 5,000 acres, contiguous to existing designated wilderness	9	6
# of areas that did not meet wilderness inventory criteria, between 1,000 and 5,000 acres	34	52
# of areas that did not meet wilderness inventory criteria, less than 1,000 acres	210	497
# of areas that did not meet wilderness inventory criteria, less than 1,000 acres, contiguous to existing designated wilderness	47	37

Evaluation

The evaluation step examines the wilderness characteristics of lands in the inventory using the criteria in section 72 of the Wilderness Recommendation Handbook.

Creation of an Evaluation Dataset and Map Based on the Final Inventory

The first step of the evaluation phase was to create a clean dataset with which to begin the evaluations. The evaluation map and dataset include all the areas that met the inventory criteria in the final inventory and exclude the areas considered but eliminated from the final inventory.

Consideration of Motorized Trails

The Sequoia and Sierra National Forests examined the evaluation polygons to determine whether wilderness characteristics were affected by authorized motorized trails. Motorized trails were authorized as part of each forest's transportation system through recent travel management decisions.

The following process was used to examine motorized trails:

1. Mapping designated motorized trails on top of the final inventory polygons.
2. Creating subpolygons within the final inventory polygons to separate areas containing authorized motorized trails from the rest of the polygon.

3. Evaluating subpolygons with authorized motorized trails to determine the impact of those trails on wilderness characteristics, considering:
 - a. The prevalence of motorized trails.
 - b. The level of commitment to these trails.

Based on this process, wilderness characteristics of approximately 173,768 acres across the Sequoia National and Sierra National Forest were found to be affected by authorized motorized trails. The maps with the identified areas affected by motorized trails were posted to the “Talking Points” website at <https://my.usgs.gov/ppgis/studio/launch/16850>. The public was given the opportunity to provide input on the maps between September 5, 2014 and September 24, 2014.

Evaluation of Wilderness Characteristics

Interdisciplinary teams of Sequoia National Forest and Sierra National Forest staff examined wilderness characteristics of each area using the criteria in section 72 of the Wilderness Recommendation Handbook:

1. The degree to which the area generally appears to be affected primarily by the forces of nature, considering factors such as:
 - a. Whether the composition of plant and animal communities appears natural (for example, past management activities have created a plantation-style forest with trees of a uniform specie and age and planted in rows).
 - b. Extent to which the area appears to reflect ecological conditions that would normally be associated with the area without human intervention.
 - c. Extent to which improvements included in the area represent a departure from apparent naturalness.
2. The degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation. The word “or” means that an area only has to possess one or the other. The area does not have to possess outstanding opportunities for both elements, nor does it need to have outstanding opportunities on every acre.

Considerations include:

 - a. Impacts that are pervasive and influence a visitor’s opportunity for solitude within the evaluated area. Factors to consider may include topography, presence of screening, distance from impacts, degree of permanent intrusions, and pervasive sights and sounds from outside the area.
 - b. The opportunity to engage in primitive and unconfined type of recreation. Factors may include the degree of challenge or risk while using outdoor skills.
3. The degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. These values are not required to be present in an area, but their presence should be identified and evaluated where they exist.
4. The degree to which the area may be managed to preserve its wilderness characteristics.
 - a. Shape and configuration of the area.
 - b. Legally established rights or uses within the area.

- c. Specific Federal or State laws that may be relevant to the availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics.
- d. The presence and amount of non-Federal land in the area.
- e. Management of adjacent lands.

Public Input on the Evaluation

Public input was gathered in a number of ways throughout the process and was considered in the development of the evaluation narratives. In September 2014, maps were posted to the “Talking Points” website at <https://my.usgs.gov/ppgis/studio/launch/16850> and the public was asked to provide information between September 5, 2014 and September 24, 2014 to help document the wilderness characteristics of the areas. Stakeholders provided information via this website through general written comments and also by highlighting specific points or areas on the map and attaching comments specific to those areas.

Comments regarding the wilderness evaluation were also received through the project website, email, and postal mail during the scoping period. The wilderness evaluation process and maps were also part of the public workshops and tribal forums held on the Sequoia National Forest and Sierra National Forest in September 2014.

From June to November 2015, additional public input on the evaluation process was received and reviewed, along with input on the initially selected areas for analysis as recommended wilderness (see “Analysis” section). Draft evaluation narratives were refined to include new, relevant information, to improve consistency and clarity in the evaluation narratives, and to add more detail regarding wilderness characteristics in the evaluation narratives.

In December 2015, the public was given the opportunity to review and provide feedback on the draft wilderness evaluation narratives for areas under consideration for analysis in the alternatives, as well as maps and tables, for each forest, prior to the completion of the draft environmental impact statement. This resulted in further adjustments to the wilderness evaluation narratives. For more information on feedback received, see the “Analysis” section below.

Summary of Public Input

Several stakeholders were under the impression the evaluation maps represented the recommendations for additional designated wilderness on the Sequoia National Forest and Sierra National Forest. In addition, there was a perception that the “Talking Points” map did not display all existing roads or other developments. These perceptions had a noticeable influence on the input we received.

Public input generally fell into the following categories:

1. Views on recommending additional wilderness areas.
 - a. Stakeholders opposed to recommending additional wilderness areas generally cited the lack of wilderness characteristics in areas with motorized trails, mountain bike trails, or other improvements.
 - b. Stakeholders in favor of recommending additional wilderness areas generally cited an area’s natural qualities, opportunities for primitive recreation, or other features of value.

2. Wilderness inventory and evaluation process.
 - a. The motorized recreation community expressed concern that the evaluation process would override and nullify decisions on the forest transportation system made through the recent travel management process.
 - b. Wilderness advocacy organizations wanted to see an assessment of whether the areas in the final inventory contained underrepresented ecosystems in the National Wilderness Preservation System.
 - c. Some stakeholders were concerned about excluding areas with motorized trails identified on the “Talking Points” map from the evaluation of wilderness characteristics.
 - d. Some stakeholders wanted to see a broader evaluation process, ranging from being more inclusive of all roadless areas to reconsidering designated wilderness boundaries.
3. Impacts or management issues from additional wilderness designations.
 - a. Concerns with the agency’s ability to manage additional wilderness.
 - b. Concerns that additional wilderness would reduce the amount of California state off-highway vehicle grants coming to the forests and reduce the off-highway vehicle community’s volunteer and financial contributions to maintaining motorized trails.
 - c. Concerns that additional wilderness would limit areas on the forest open to multiple-use recreation and would harm the tourism economies of gateway communities.
 - d. Concerns that additional wilderness would limit a forest’s ability to conduct fuels treatments or fire suppression activities, especially adjacent to communities or private lands.
 - e. Concerns that additional wilderness would affect the ability of people who are disabled or elderly to access the national forests.
 - f. Concerns about restrictions on livestock grazing.

How Public Input was Incorporated

Motorized Trails

Some of the input received on motorized trails resulted from viewers not being able to see them on the “Talking Points” map. The visibility of motorized trails on this map is scale dependent and requires viewers to zoom in to a certain level before being able to see the motorized trails.

The presence of authorized motorized trails in an inventory area is not by itself a sufficient basis for not conducting an evaluation of the area. The evaluation narrative for each inventory area contains a summary of the motorized trails within the area and describes the effects those trails have on the wilderness characteristics and manageability of the area.

Wilderness Characteristics

Any new, relevant information regarding the wilderness characteristics of a specific area was validated and then incorporated into the evaluation narrative.

Recommending Additional Areas

Public feedback regarding which polygons to recommend or not was reviewed, categorized, and summarized. Forest supervisors then considered the information in deciding which areas or portions of areas to carry forward as recommended wilderness in one or more of the alternatives.

Underrepresented Ecosystem Types

The Wilderness Society submitted substantial and detailed information regarding ecosystem representation, including several tables and maps. We reviewed and synthesized this information and included summaries in the wilderness evaluation narratives.

Broadness of the Evaluation Process

The Forest Service's wilderness evaluation process is intended to be transparent and consistent for all national forests across the country. All national forests follow the guidance set forth in the Wilderness Recommendation Handbook.

Management of Recommended Wilderness

The revised forest plan provides management direction for any recommended wilderness areas. When developing plan components for recommended wilderness areas, the forest supervisor has discretion to implement a range of management options. If any areas are recommended for wilderness through a revised forest plan, the national forest is required "to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation" (36 CFR section 219.11).

Other Factors and Management Issues

Many of the additional concerns raised by the public were not applicable to the evaluation of wilderness characteristics. However, they were considered by forest supervisors during the analysis.

Explanatory Notes on Roads and Motorized Trails

Roads

A National Forest System road is a road wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources (36 CFR 212.1). In several instances, reference is made to "level 1 roads" or "level 2 roads" on National Forest System land. This refers to the level of service provided by, and maintenance required for, a specific road (Forest Service Handbook 7709.59, chapter 60, section 62.3). The following explanation of those maintenance levels is taken from Forest Service Handbook, 1909.12, Chapter 12, Wilderness:

1. Level 1 roads are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are to prohibit and eliminate all traffic. These roads are not shown on motor vehicle use maps.

Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic but may be available and suitable for non-motorized uses.

2. Level 2 roads are open for use by high-clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as W-18-1 “No Traffic Signs,” may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log hauling may occur at this level. Appropriate traffic management strategies are either to discourage or prohibit passenger cars. Accept or discourage strategies may be employed for high clearance vehicles.

Cherry Stem Roads

Throughout the descriptions of polygons, there are references to cherry stem roads. A cherry stem road refers to a dead-end road that appears to protrude into a polygon, but the boundary of the polygon is drawn around the road to exclude it from the interior of a polygon.

Authorized Motorized Trails or Authorized Forest System Roads

Throughout the descriptions of polygons, there are references to authorized motorized trails or authorized National Forest System roads. These were designated by travel management records of decision.

Analysis

Initial Selection of Areas

The draft wilderness evaluation narratives provided the foundation for the initial selection of areas to analyze as recommended wilderness. Forest supervisors and staff reviewed the draft wilderness evaluation narratives and as a starting point, considered the quality of wilderness characteristics, the extent of development and use within and adjacent to the areas, and the feasibility of management as recommended wilderness. During the initial selection of areas, forest supervisors also considered public comments received as well as input from the tribal forums.

Maps and narrative descriptions were developed for each initially selected area that described the following:

- Name of potential recommended wilderness area.
- Number of acres.
- Location and potential boundary.
- General geography, topography, and vegetation.
- Current uses.
- Wilderness characteristics of the area and the ability to protect and manage the area to preserve those wilderness characteristics.

In May 2015, the Forest Service posted the maps and narratives of these initially selected areas on the Pacific Southwest Regional planning website:

<http://www.fs.usda.gov/detail/r5/landmanagement/planning/?cid=STELPRD3803608>

Identification of Additional Areas

Based on public input received from June to November 2015 on the initially selected areas and evaluation process, the forest supervisors and staff continued reviewing additional areas to carry forward as recommended wilderness under one or more alternatives. Forest supervisors considered the following factors in selecting areas:

1. Appearance of naturalness.

Forest supervisors considered whether human modifications (for example, mining operations, plantations) to the area were substantially noticeable. Areas where human modifications were substantially noticeable and adversely affected the appearance of naturalness were not carried forward.

Where possible, boundaries were redrawn to exclude areas with substantially noticeable human modifications or activities that adversely affected the appearance of naturalness.

2. Outstanding opportunities for solitude or primitive and unconfined recreation.

Forest supervisors considered the degree to which areas offered opportunities for solitude or a primitive and unconfined recreation. Where external factors adversely impacted these opportunities, Forest supervisors considered how extensive these impacts were within the areas. The presence or adjacency of motorized roads or trails, groomed snowmobile trails, recreation sites, and infrastructure affected whether areas were carried forward.

Where possible, boundaries were redrawn to exclude areas where the presence or adjacency of such impacts adversely affected opportunities for solitude or a primitive and unconfined recreation experience.

3. Manageability.

Forest supervisors considered the degree to which existing management activities and potential future management needs might adversely impact wilderness characteristics. This included, but was not limited to, management of existing special use permits and facilities.

Where possible, boundaries were redrawn to exclude areas where management activities might adversely impact wilderness characteristics.

4. Ecosystem representation.

Forest supervisors considered whether areas presented opportunities to protect ecosystem types that are underrepresented in the National Wilderness Preservation System.

Each area was evaluated holistically. Selected and exclusion decisions for individual areas were generally based on multiple factors, and took into account the level of public interest in recommending wilderness areas on each forest.

Public Input on Areas Considered for Analysis and Draft Evaluation Narratives

In December 2015, the public was given the opportunity to review and provide feedback on the draft wilderness evaluation narratives for areas under consideration for analysis in the alternatives, as well as maps and tables, for each forest, prior to the completion of the draft

environmental impact statement. The public was invited to review these materials and provide feedback over a 45-day period. The Forest Service also asked for input regarding suitable uses and management of recommended wilderness. The Forest Service received and reviewed over 300 submissions from individuals and organizations.

Summary of Public Input

The majority of comments received came from the mountain biking community and expressed opposition to including any of the areas in the alternatives.

Public input generally fell into the following categories:

1. Areas being considered for inclusion.
 - a. Concerns that areas were excluded based on inaccurate evaluations (for example, manageability) or other reasons.
 - b. Concerns that the Forest Service had not provided rationale or a repeatable process for identifying areas to carry forward.
 - c. Concerns with the reduction in size of areas carried forward without adequate explanation.
 - d. Concerns as to why several areas in the Giant Sequoia National Monument were not being considered for inclusion.
 - e. Concerns that not enough inventoried roadless areas were being considered for inclusion.
 - f. Concerns with roads and road setbacks.
2. Alternatives.
 - a. Concerns that the areas carried forward do not constitute a broad range of alternatives as required by the National Environmental Policy Act.
 - b. Concerns that there should be additional alternatives that better balance protection of lands with wilderness values and other management needs inconsistent with wilderness values.
 - c. Concerns that specific areas were not proposed for inclusion in specific alternatives.
3. Wilderness evaluation process.
 - a. Concerns with the sequence of the process.
 - b. Concerns regarding coordination with local governments.
 - c. Concerns with the inventory process.
4. Draft wilderness evaluation narratives.
 - a. Concerns that management trade-offs and manageability of areas as recommended wilderness were improperly considered.
 - b. Concerns with the level of emphasis placed on the presence of past or current human activities or improvements when evaluating naturalness.

- c. Concerns that the criterion requiring an area to have “outstanding opportunities for solitude or a primitive and unconfined type of recreation” was improperly applied.
 - d. Concerns that when referencing outside sights and sounds as an impact to naturalness, descriptions of how pervasive these sights or sounds were inadequate.
 - e. Concerns that when referencing the presence of motorized uses as an impact to opportunities for solitude, descriptions of how pervasive these uses were and how opportunities for solitude were influenced was inadequate.
 - f. Concerns with inconsistencies in the findings and the narratives.
 - g. Concerns with the assumption that plant species and wildlife will do better if in wilderness than on multiple-use lands.
 - h. Concerns that wilderness characteristics of inventoried roadless areas within larger polygons were not adequately addressed. Issues with inconsistencies between evaluation narratives and descriptions of inventoried roadless areas included in existing plans.
 - i. Concerns that important motorized backcountry or alpine off-highway vehicle trails may have been missed because they are outside of identified destination off-highway vehicle areas.
 - j. Concerns with bias in the evaluation narratives.
5. Area-specific information.
- a. Suggestions for additional areas to include or exclude in the analysis and specific information about why.
 - b. Details about activities, unique features of value, and existing uses in specific areas.
6. Specific activities.
- a. Concerns that management of recommended wilderness areas would be the same as designated wilderness areas, where recreation using motorized equipment and mechanized transportation would be prohibited or severely restricted.
 - b. Types of activities highlighted included motorized recreation, over snow vehicle use, mountain biking, climbing, rockhounding, orienteering, adventure racing, research activities and installations, fire management, wildlife management, historic structures management, and livestock grazing.
7. Issues with maps.
- a. Requests to include more detailed maps of the areas to better located analysis polygon boundaries and their relationship to roads and trails.
 - b. Suggestions to update certain analysis polygon names to better match the names of places within them.
 - c. Suggestions to provide electronic copies of detailed maps that allow the public to zoom in and out.

- d. Discrepancies among the data, descriptions, and maps, though no further details were provided.
- 8. Feedback on suitable uses in recommended wilderness.
 - a. Requests to allow human-powered transport, including bicycles.
 - b. Requests to prohibit mountain biking and off-road vehicles.
 - c. Requests to manage landscapes to maintain wilderness characteristics while also allowing for diverse recreation activities and uses through creative and tailored agency management prescriptions and alternative land protection designations.
 - d. Requests to follow Forest Service directives and provide documentation and rationale for continuing to allow uses in recommended wilderness that would not be allowed in designated wilderness, as well as standards to ensure wilderness potential is not reduced.
 - e. Requests to manage recommended wilderness areas to maintain existing wilderness character and potential.
 - f. Suggestions for desired conditions for recommended wilderness.
 - g. Allowing up to 10 percent tree harvesting.
 - h. Making sure hunting regulations are the same as surrounding forests.
 - i. Allowing access to wildlife guzzlers for maintenance needs.

Final Identification of Areas to Analyze

The Forest supervisors carefully considered public feedback and used the following process to identify the final set of areas to analyze as recommended wilderness in the alternatives:

1. Identify areas that the public has shown the greatest interest in analyzing as recommended wilderness.
2. Review and refine the wilderness evaluation narratives based on public input.
3. Use a consistent approach to determine which areas to include in the analysis.

Identify Areas of Greatest Public Interest

The first step was to identify areas of greatest public interest that were not already being considered for inclusion in the analysis. Areas considered to be of greatest public interest included areas that multiple stakeholders expressed interest in and that also came up several times throughout the process.

Further Refine Wilderness Evaluation Narratives

The second step was to review the wilderness evaluation narratives to address the most critical concerns identified in public comments. Specifically, a review of the evaluation narratives was conducted to ensure they included appropriate management considerations and accurate descriptions of existing conditions and activities, including the relative influence of these conditions and activities on wilderness characteristics. These concerns were considered to be the most critical because they had the potential to influence consideration of an area for inclusion in the analysis.

In terms of management considerations, descriptions within the evaluation narratives were reviewed that the public expressed concerns about, particularly fire management, livestock grazing, management of threatened and endangered species, invasive species management, and ecological restoration. In terms of the influence of existing conditions and activities on wilderness characteristics, description of naturalness were reviewed to ensure that assessments of wilderness characteristics were not solely based on the natural range of variation. Where applicable, evaluation narratives were revised to include more detailed descriptions of the impacts of motorized uses on opportunities for solitude. Finally, we corrected any factual errors identified by the public.

During this review of evaluation narratives, exclusions of polygons from the analysis were reassessed based on the refinements made in response to public input. In particular, we focused on those polygons that the public showed interest in at some point in the process. As a result, some of the polygons no longer had strong rationale for why they were not carried forward into the analysis.

Determine Which Areas to Include in the Analysis

The Forest supervisors decided to include additional recommended wilderness areas as part of alternative C in response to public input. Areas of greatest public interest were included as part of alternative C, as well as additional areas considered while refining the evaluation narratives that no longer had strong rationale for why they were not carried forward into the analysis. However, the areas that include authorized motorized trails based on recent travel management decisions were excluded. One exception to this is the Sirretta Trail on the Sequoia National Forest, which was identified in the Mediated Settlement of 1990 for removal and/or replacement. These motorized portions of the polygons are part of an alternative considered but eliminated from detailed study (see Volume 1, Chapter 2). Some of the areas that were previously shared with the public as potential recommended wilderness within alternative C were adjusted to include more of the original evaluation polygon, but without the portions that contained motorized uses. As a results, more of the non-motorized areas the public was interested in analyzing was included and consistency among alternative C recommended wilderness areas was improved.

The forest supervisors did not make adjustments to alternatives B or D.

An examination of the analysis polygons in alternative C resulted in the identification of some polygons.

In addition, some areas within the Sequoia National Forest alternative C analysis polygons were adjusted because they contained National Forest System roads currently open to the public as indicated on the forest's motor vehicle use map. The motor vehicle use map was create through the recent travel management decision involving public participation. These areas had initially been included in the inventory and evaluation because they were listed in the National Forest System roads database as objective maintenance level 1 roads or they were identified during the Sequoia's travel analysis process as "likely not needed."

However, the travel analysis process process was a broad-scale analysis that was not intended to collect data to allow site specific analysis, did not include public input, and didn't make any decisions. Under the rating system used in the travel analysis process process, roads that only provide access for one function (a single type of use) were likely to end up with a finding of "likely not needed." Travel analysis process was intended to be an initial screening process to

identify opportunities to consider during future projects. However, it was premature to analyze as potential recommended wilderness some of the areas with roads identified as “likely not needed,” because in fact, some of these roads provide access that is important enough to maintain the roads for single uses, such as access to developed recreation site or an administrative site.

Further, through the travel management decision, it was determined that these roads provide access for a variety of uses, including street legal and off highway vehicle riding, access to dispersed camping sites, and other recreation opportunities and the Sequoia National Forest’s intent is to manage the roads identified on the motor vehicle use map for public use. At the time of the inventory and evaluation, the National Forest System roads database had not yet been updated to reflect the travel management decision and revised objective maintenance levels.

Recommendation

Based on the analysis in the environmental impact statement and public input received, the forest supervisors will make decisions on specific areas to recommend for inclusion in the National Wilderness Preservation System. The decision will be included in the final decision document for the plan as a preliminary administrative recommendation. Plan components will provide direction for managing areas recommended for wilderness designation. The areas must be managed to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness recommendation.

Appendix C

Wild and Scenic Rivers Study Process

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Appendix C.

Wild and Scenic Rivers Study Process

Overview

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Wild and Scenic Rivers Act,¹ which established the system, is notable for safeguarding the special character of these rivers, while recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection. Section 5(d)(1) of the Act states:

In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potential. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all federal agencies as potential alternative uses of the water and related land resources involved.

As outlined in the Wild and Scenic Rivers Act, in developing a proposed new plan or proposed plan revision, National Forests are required by the 2012 Planning Rule (36 CFR 219.7(c)(2)(vi)) to “identify the eligibility of rivers for inclusion in the National Wild and Scenic Rivers System, unless a systematic inventory has been previously completed and documented, and there are no changed circumstances that warrant additional review.”

The Rule also requires the Forest Service to manage those eligible and suitable rivers to protect the values that support their inclusion in the National Wild and Scenic River System until Congress makes a final determination on their designation.

There is a four step process outlined in FSH 1909.12, Chapter 80 that provides direction for inventory, eligibility determination, classification, and suitability. Additional guidance can be found in the Interagency Wild and Scenic Rivers Coordinating Council technical paper: The Wild and Scenic River Study Process (Interagency Wild and Scenic Rivers Coordinating Council 1999).

1. **Inventory:** The first step identifies all potential wild, scenic and recreational rivers flowing wholly or partially on National Forest System lands as identified in the Nationwide Rivers Inventory and by other sources. At minimum, the inventory includes all rivers named on a standard U. S. Geological Survey 7.5 minute USGS quadrangle map. If a systematic inventory of eligible rivers has already been completed, the extent of the study process during plan development or revision can be limited to evaluation of any rivers that were not previously evaluated for eligibility and those with changed circumstances.
2. **Eligibility determination:** The second step is to determine eligibility for inclusion in the National Wild and Scenic Rivers System. To be eligible for designation, a river must be

¹ Public Law 90-542; 16 U.S.C. 1271 et seq.

free-flowing and possess one or more “outstandingly remarkable values.” Thus, the eligibility analysis consists of an examination of the river’s hydrology, including any man-made alterations, and an inventory of its natural, cultural, and recreational resources.

An outstandingly remarkable value must be river-related and determined to be a unique, rare, or exemplary feature that is significant regionally or nationally. Potential outstandingly remarkable values may include: scenery, recreation, geology, fish and wildlife populations and habitat, prehistory, history or other river-related values (i.e. paleontological or botanical). While the spectrum of resources that may be considered is broad, to be “river-related,” values should:

- Be located in the river or on its immediate shore lands (generally within ¼ mile on either side of the river);
- Contribute substantially to the functioning of the river ecosystem; and/or
- Owe their location or existence to the presence of the river.

3. **Classification:** The third step is to assign a preliminary classification of “wild,” “scenic,” or “recreational,” to each eligible river or river segment. Classification is based on the condition of the river segment and the development level of adjacent lands as they exist at the time of the study. When levels of human use and activity create different degrees of development within the study area, rivers segments may be further divided into segments and assigned different classifications. In cases where a river has one or more classifications, each river segment identified should be of sufficient length to warrant its own unique management.

For example, a 100-mile wild and scenic river found to be eligible may be segmented and classified as “wild” for 50 miles, “scenic” for 30 miles, and “recreational” for 20 miles. A final classification will be assigned during the comprehensive river management planning process required by the Wild and Scenic River Act if the river is designated by Congress. The Act and interagency guidelines provide general descriptions of each classification in terms of water resources development, shoreline development, accessibility, and water quality:

- **Wild:** Free of impoundments. Generally inaccessible except by trail. Shorelines essentially primitive with little or no evidence of human activity. Meets, or exceeds water quality criteria.
- **Scenic:** Free of impoundments. Accessible in places by road. Shorelines largely primitive and undeveloped with no substantial evidence of human activities. No water quality criteria.
- **Recreational:** May have some impoundment or diversion, provided the waterway remains generally natural and riverine in appearance. Readily accessible by road or railroad. Shorelines may have some development and substantial evidence of human activity. No water quality criteria.

4. **Suitability:** The fourth step is to study suitability and may occur during forest plan revision but is not required. Suitability studies address these questions:

- Should the river’s free-flowing character, water quality, and outstandingly remarkable values be protected, or are one or more other uses important enough to warrant doing otherwise?

- Will the river's free-flowing character, water quality, and outstandingly remarkable values be protected through designation?
- Will the benefits of designation exceed the benefits of non-designation?
- Is designation the best method for protecting the river corridor?
- Is there a demonstrated commitment to protect the river by any non-Federal entities that may be partially responsible for implementing protective management?

Suitability was not be completed as part of the current forest plan revision process, but will be completed in a future separate National Environmental Policy Act (NEPA) process.

This appendix begins by providing information related to the most recent step in the wild and scenic rivers study process (eligibility study), followed by a summary of the whole process, including the inventory:

- Wild and Scenic Rivers Eligibility and Preliminary Classification Summary
- Detailed Study Results
- Description of the Wild and Scenic Rivers Study Process

Wild and Scenic Rivers Eligibility and Preliminary Classifications Summary

Map C-1 and Table C-1 provide a summary of the river segments within the Sequoia National Forest that were determined to be eligible for inclusion in the National Wild and Scenic Rivers System, including preliminary classification. Map C-2 and Table C-2 provide a summary of the river segments within the Sierra National Forest that were determined to be eligible for inclusion in the National Wild and Scenic Rivers System, including preliminary classification. Larger, higher resolution maps are available to view online at the Pacific Southwest Region (Region 5) Web page at:

<http://www.fs.usda.gov/detail/r5/landmanagement/planning/?cid=STELPRD3833668>.

Sequoia National Forest

Table C-1. Sequoia National Forest river segments determined to be eligible for inclusion in the National Wild and Scenic Rivers System

River Name	GIS Number	Miles	Preliminary Classification	Outstandingly Remarkable Values
Kern River	2.104.2	7.4	Recreational	Scenery, Recreation, Wildlife Population and Habitat
Kern River	2.104.3	12.7	Scenic	Scenery, Recreation, Wildlife Population and Habitat
Kern River	2.104.4	11.5	Recreational	Scenery, Wildlife Population and Habitat, Prehistory, History
Kings River*	2.106.1	3.9 (3.9 in GSNM)	Wild	Scenery, Recreation, History, Prehistory, Wildlife Population and Habitat
Kings River*	2.106.2	7.5 (4.8 in GSNM)	Scenic	Scenery, Recreation, History, Prehistory, Wildlife Population and Habitat
Kings River*	2.106.3	1.3	Recreational	Scenery, Recreation, History, Prehistory, Wildlife Population and Habitat
Little Kern River	2.118	12.4	Wild	Scenery, Recreation, Geology, Fish Population and Habitat, Wildlife Population and Habitat
Little Kern River	2.119	12.0	Wild	Recreation, Fish Population and Habitat, Wildlife Population and Habitat
North Fork Middle Fork Tule River	2.159.1	2.7 (1.9 in GSNM)	Wild	Botany
North Fork Tule River	2.160	3.9 (3.9 in GSNM)	Wild	Recreation, Prehistory, History
South Fork Kern River	2.212.1	0.3	Wild	Same as Recommended segment of South Fork Kern River (1 mile)
Alpine Creek	2.7	7.2	Wild	Fish Population and Habitat
Belknap Creek	2.20	2.3 (2.3 in GSNM)	Recreational	Geology, Prehistory, History
Bitter Creek	2.22	3.3	Scenic	Recreation, Fish Population and Habitat, Prehistory
Bone Creek	2.25	4.5 (4.5 in GSNM)	Recreational	Fish Habitat
Boulder Creek	2.28	11.6 (9.1 in GSNM)	Wild	Geology
Brush Creek	2.30	9.9	Scenic	Scenery, Recreation, Geology, Fish Population and Habitat, Wildlife Population and Habitat
Bull Run Creek	2.32	12.4	Recreational	Geology, Prehistory, History

Appendix C. Wild and Scenic Rivers Study Process

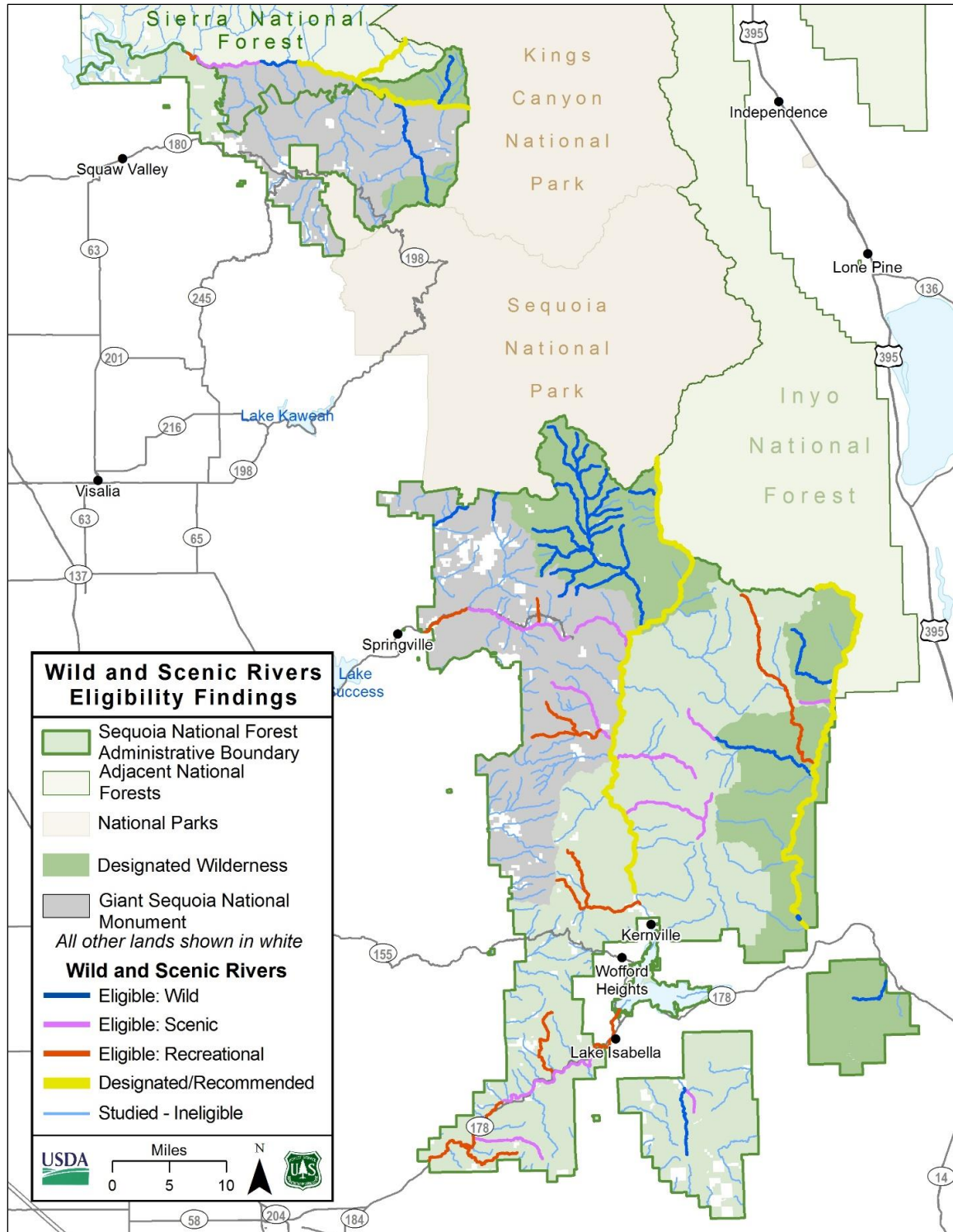
River Name	GIS Number	Miles	Preliminary Classification	Outstandingly Remarkable Values
Clicks Creek	2.45	5.8 (1.3 in GSNM)	Wild	Fish Population and Habitat
Deep Creek	2.60	4.8	Wild	Fish Population and Habitat
Deep Creek	2.61	4.2	Recreational	Geology, Prehistory
Dry Meadow Creek	2.70.1	6.7 (6.7 in GSNM)	Scenic	Recreation, Geology
Dry Meadow Creek	2.70.2	2.6 (2.6 in GSNM)	Scenic	Scenery, Recreation, Geology, Prehistory
Fish Creek	2.78	5.8 (2.0 in GSNM)	Wild	Recreation, Prehistory Fish Population and Habitat
Fish Creek	2.79	23.4	Recreational	Fish Population and Habitat, Wildlife Population and Habitat, Prehistory
Freeman Creek	2.81	7.4 (7.4 in GSNM)	Scenic	Recreation, Prehistory, Botany
Greenhorn Creek	2.89	8.4	Recreational	History, Prehistory
Grizzly Creek	2.90	5.5 (0.1 in GSNM)	Wild	Scenery, Geology
Jacks Creek	2.99	4.4	Wild	Wildlife Population and Habitat
Lion Creek	2.114	3.5	Wild	Fish Population and Habitat
Little Kern Lake Creek	2.117	3.1	Wild	Geology, Prehistory
Lost Creek	2.125	9.4	Wild	Recreation, Fish Population and Habitat, Prehistory
Lucas Creek	2.126	7.6	Scenic	Wildlife Population and Habitat, History, Prehistory
Middle Fork Erskine Creek	2.137	2.4	Scenic	Geology, Wildlife, Botany
Middle Fork Tule River	2.138	5.1 (4.7 in GSNM)	Recreational	History, Prehistory
Mountaineer Creek	2.146	5.5	Wild	Fish Population and Habitat, Prehistory
Nobe Young Creek	2.153	8.1 (8.1 in GSNM)	Recreational	Fish Population and Habitat, Prehistory, History

Appendix C. Wild and Scenic Rivers Study Process

River Name	GIS Number	Miles	Preliminary Classification	Outstandingly Remarkable Values
North Fork Clicks Creek	2.155	2.5 (0.8 in GSNM)	Wild	Fish Population and Habitat
Pistol Creek	2.173	2.0	Wild	Fish Population and Habitat
Rifle Creek	2.186	2.9	Wild	Fish Population and Habitat
Salmon Creek	2.190	10.9	Scenic	Scenery, Recreation, Wildlife Population and Habitat, Prehistory
Salmon Creek	2.252	2.7	Scenic	Prehistory, History, Botany
Sheep Creek	2.197	2.8	Wild	Fish Population and Habitat
Shotgun Creek	2.199	3.8	Wild	Fish Population and Habitat, Scenery, Recreation
Soda Spring Creek	2.205	7.2	Wild	Fish Population and Habitat, Prehistory
South Fork Erskine Creek	2.210	6.9	Wild	Botany, Geology, Wildlife Population and Habitat
South Fork Middle Fork Tule River	2.213	12.0 (12.0 in GSNM)	Recreational	Scenery, Recreation, and Botany
South Mountaineer Creek	2.215	3.1	Wild	Fish Population and Habitat
Stark Creek	2.219	7.4	Scenic	Wildlife Population and Habitat, History
Table Meadow Creek	2.223	2.4	Wild	Fish Population and Habitat, Prehistory
Tamarack Creek	2.224	3.9	Wild	Fish Population and Habitat
Trout Creek	2.233.1	3.9	Scenic	Fish Population and Habitat, Prehistory
Trout Creek	2.233.2	11.8	Wild	Fish Population and Habitat, Prehistory
Willow Creek	2.242	4.3	Wild	Fish Population and Habitat
Total	-	36.8	-	-

* For the purposes of this study, the Lower Kings River was included within the Sequoia National Forest river segments. However, in a previous eligibility study, these segments were included within the Sierra National Forest, as described below in the Sierra National Forest, River Segments Previously Studied section.

Note: River segment mileages within the Giant Sequoia National Monument (GSNM) are provided

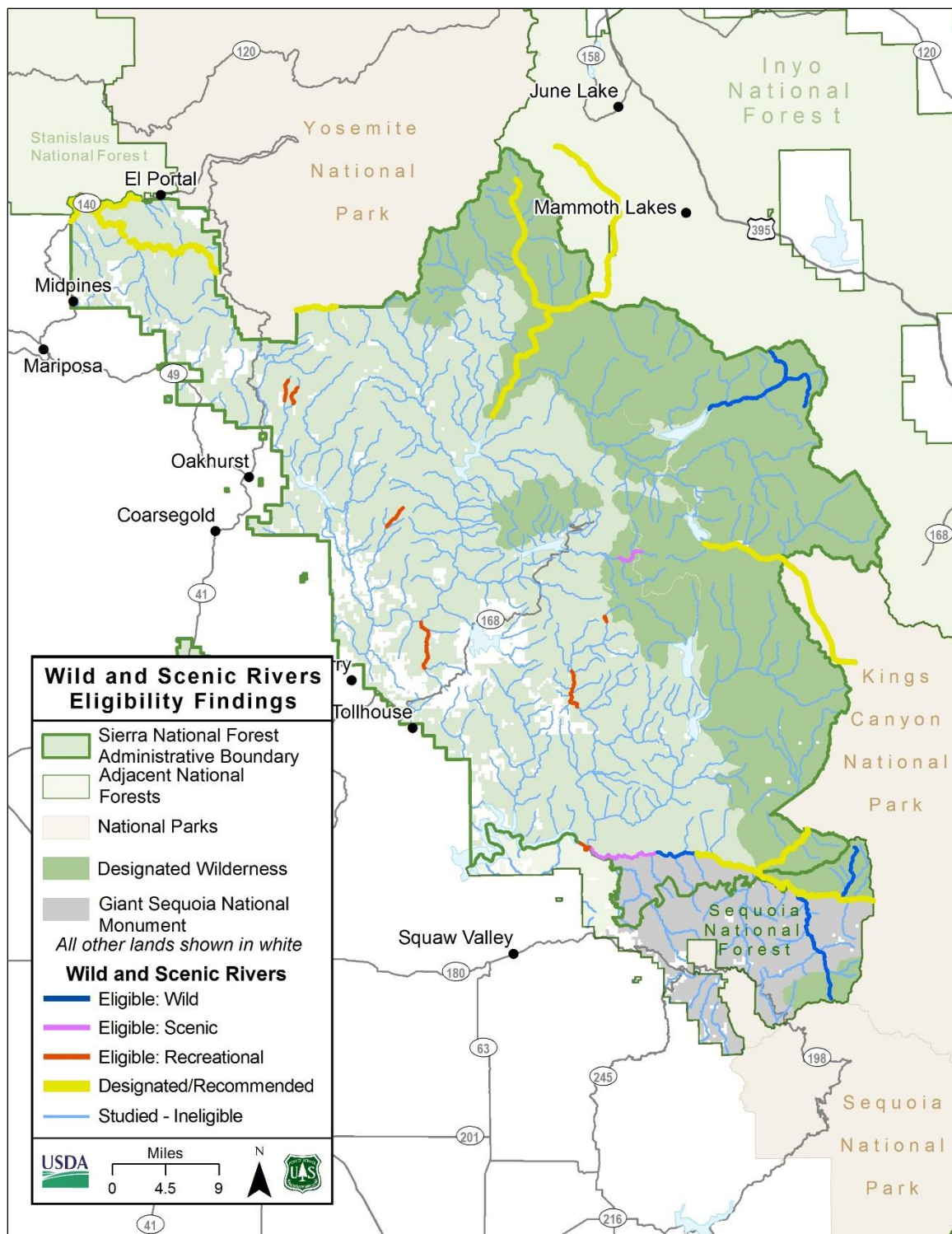


Map C-1. Sequoia National Forest Wild and Scenic River Eligibility and Preliminary Classifications

Sierra National Forest

Table C-2. Sierra National Forest river segments determined to be eligible for inclusion in the National Wild and Scenic Rivers System

River Name	GIS Number	Miles	Preliminary Classification	Outstandingly Remarkable Values
California Creek	3.34.2	1.8	Recreational	Scenery, Recreation, Botany
Dinkey Creek	3.68.2	0.7	Recreational	Recreation
Dinkey Creek	3.68.4	4.0	Recreational	History, Prehistory
East Fork Big Creek	3.77.2	3.0	Scenic	Wildlife Population
Hopkins Creek	3.119	3.7	Wild	Wildlife Population
Jose Creek	3.133.2	4.7	Recreational	Wildlife Population
Mono Creek	3.166.1	3.5	Wild	Prehistory
Mono Creek	3.166.2	9.9	Recreational	Prehistory
Nelder Creek	3.173.2	1.9	Recreational	Scenery, Recreation, Botany
Owl Creek	3.190	2.3	Recreational	Botany
Total	-	35.5	-	-

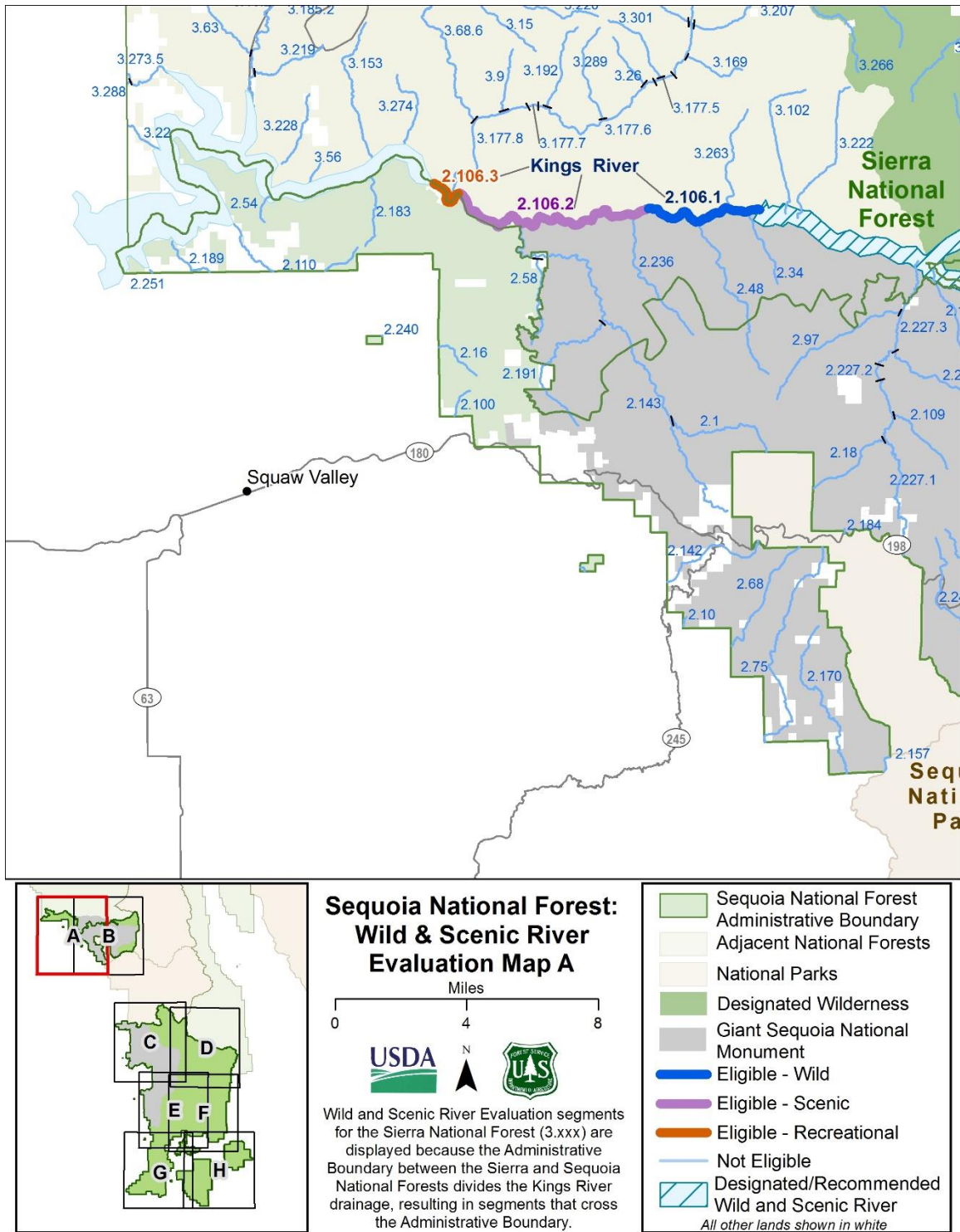


Map C-2. Sierra National Forest Wild and Scenic River Eligibility and Preliminary Classifications

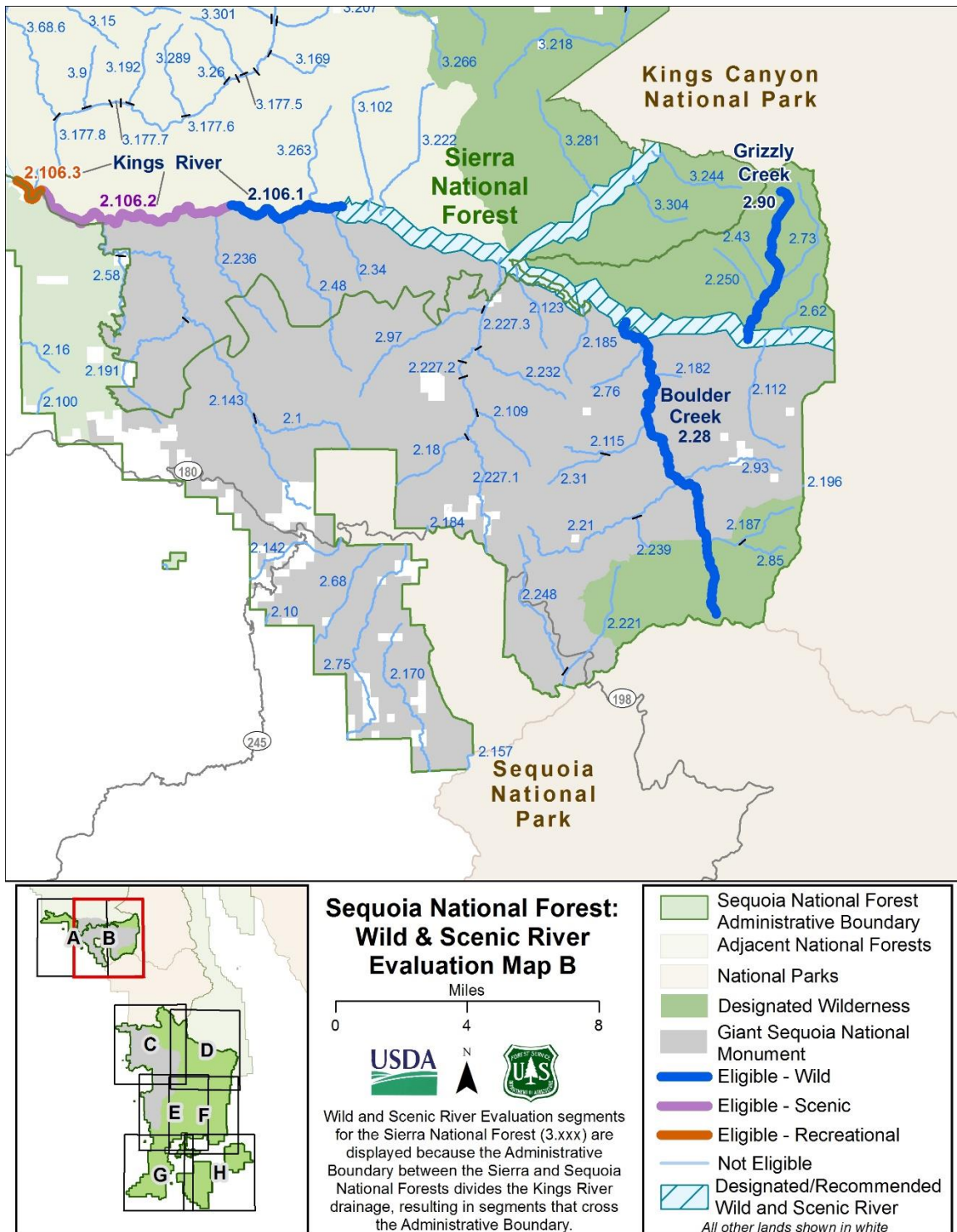
Note: For the purposes of this study, the Lower Kings River was included within the Sequoia National Forest river segments. However, in a previous eligibility study, these segments were included within the Sierra National Forest, as described below in the Sierra National Forest, River Segments Previously Studied section.

Detailed Study Results

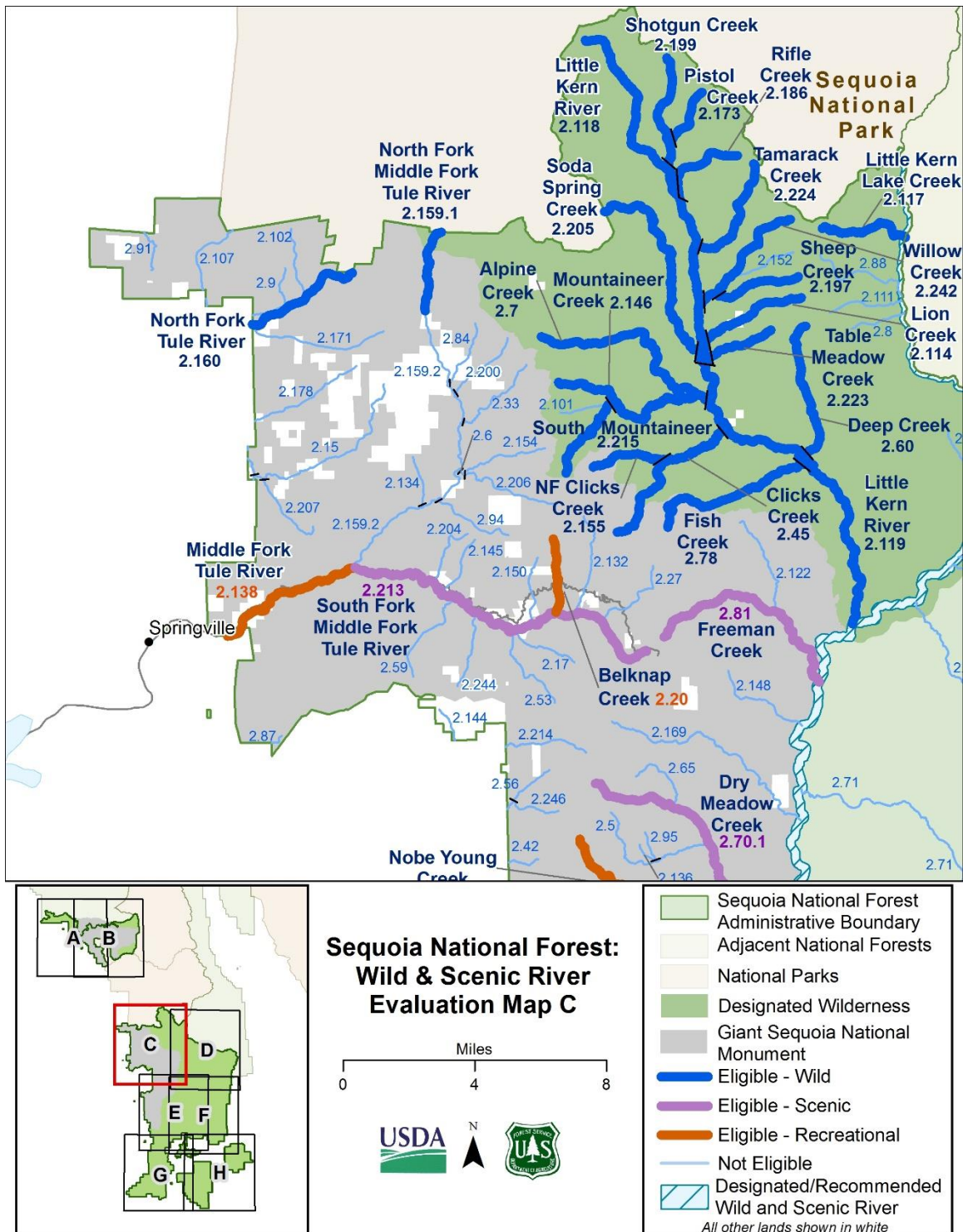
Sequoia National Forest



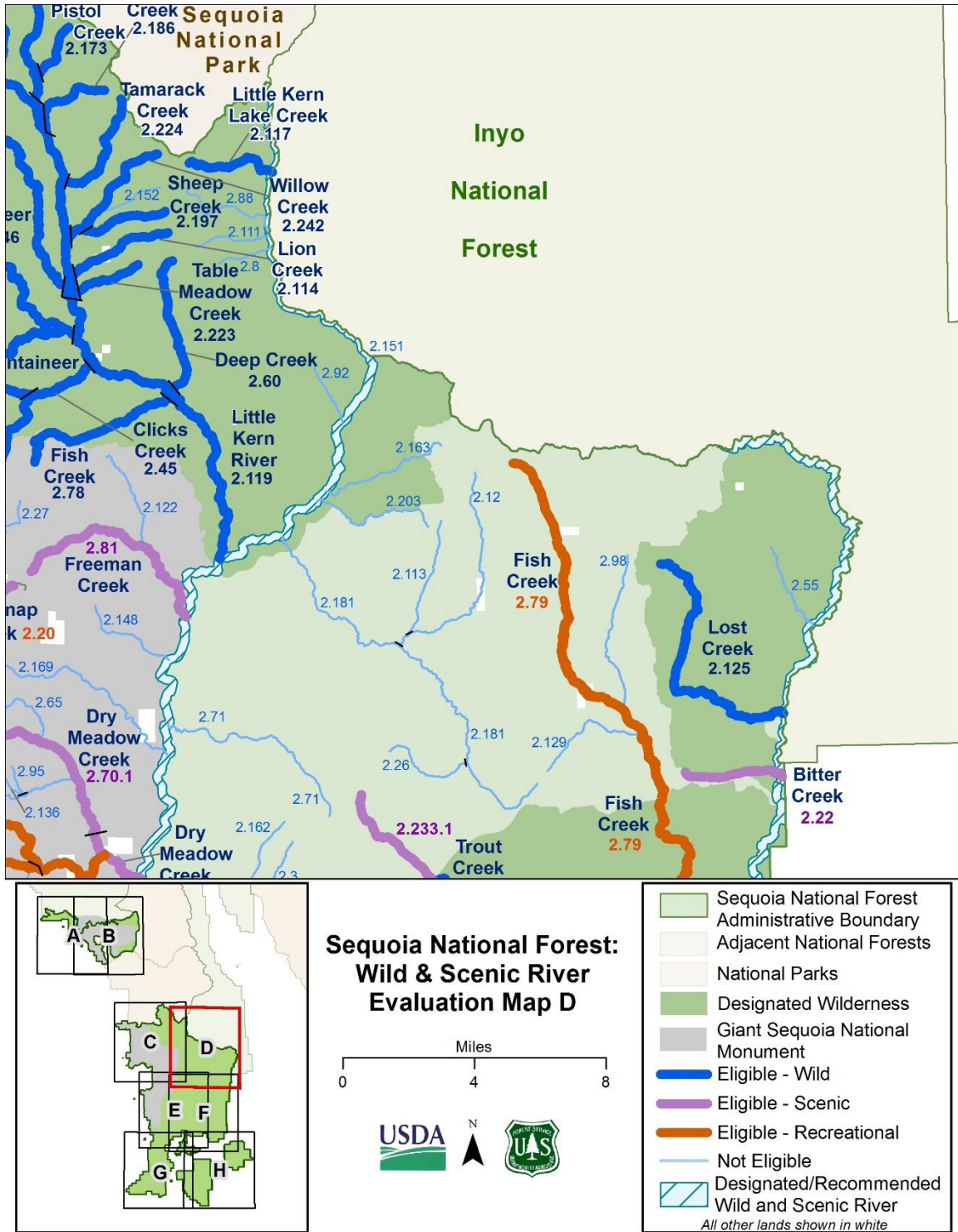
Map C-3. Sequoia National Forest Wild and Scenic River Evaluation Map A



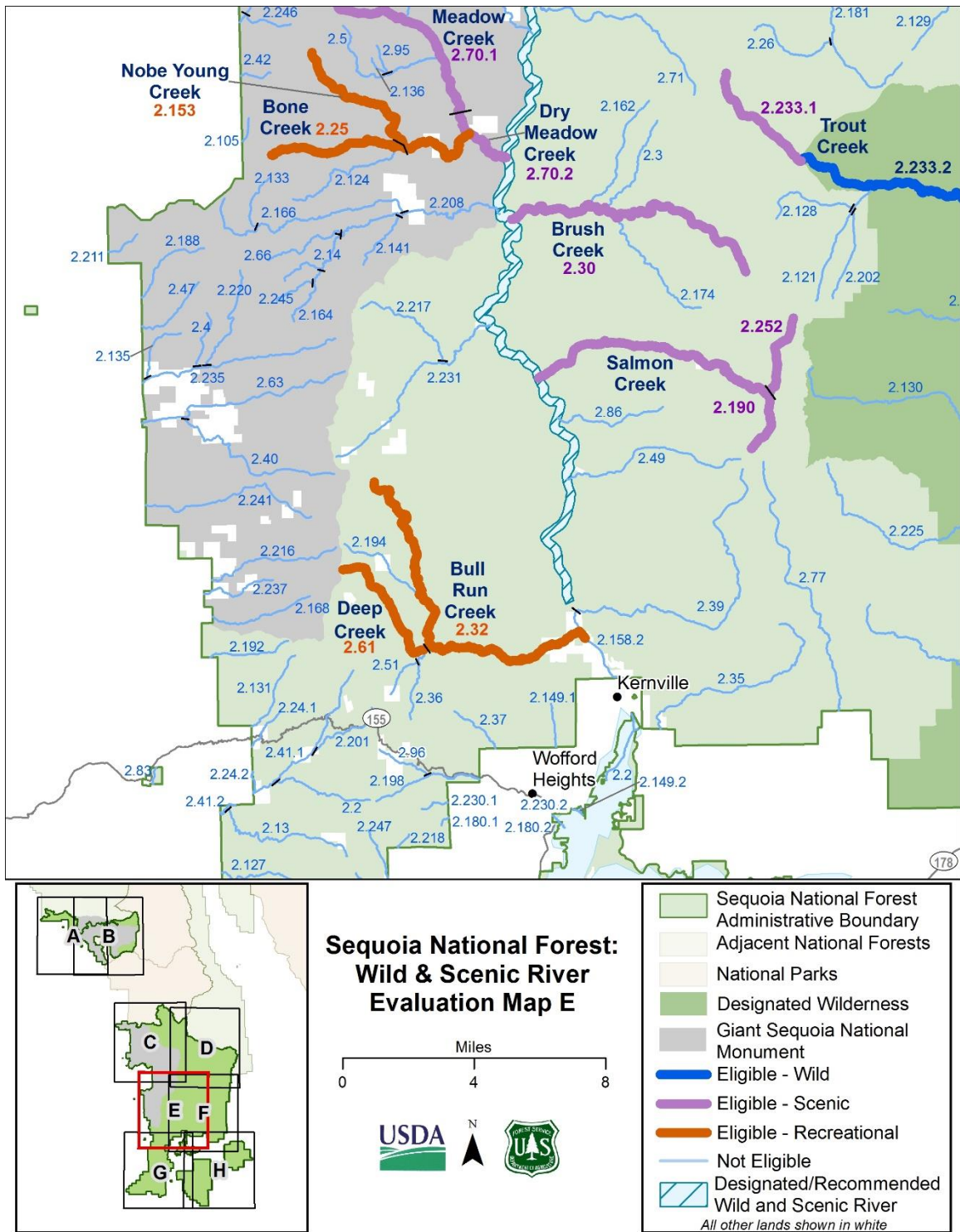
Map C-4. Sequoia National Forest Wild and Scenic River Evaluation Map B

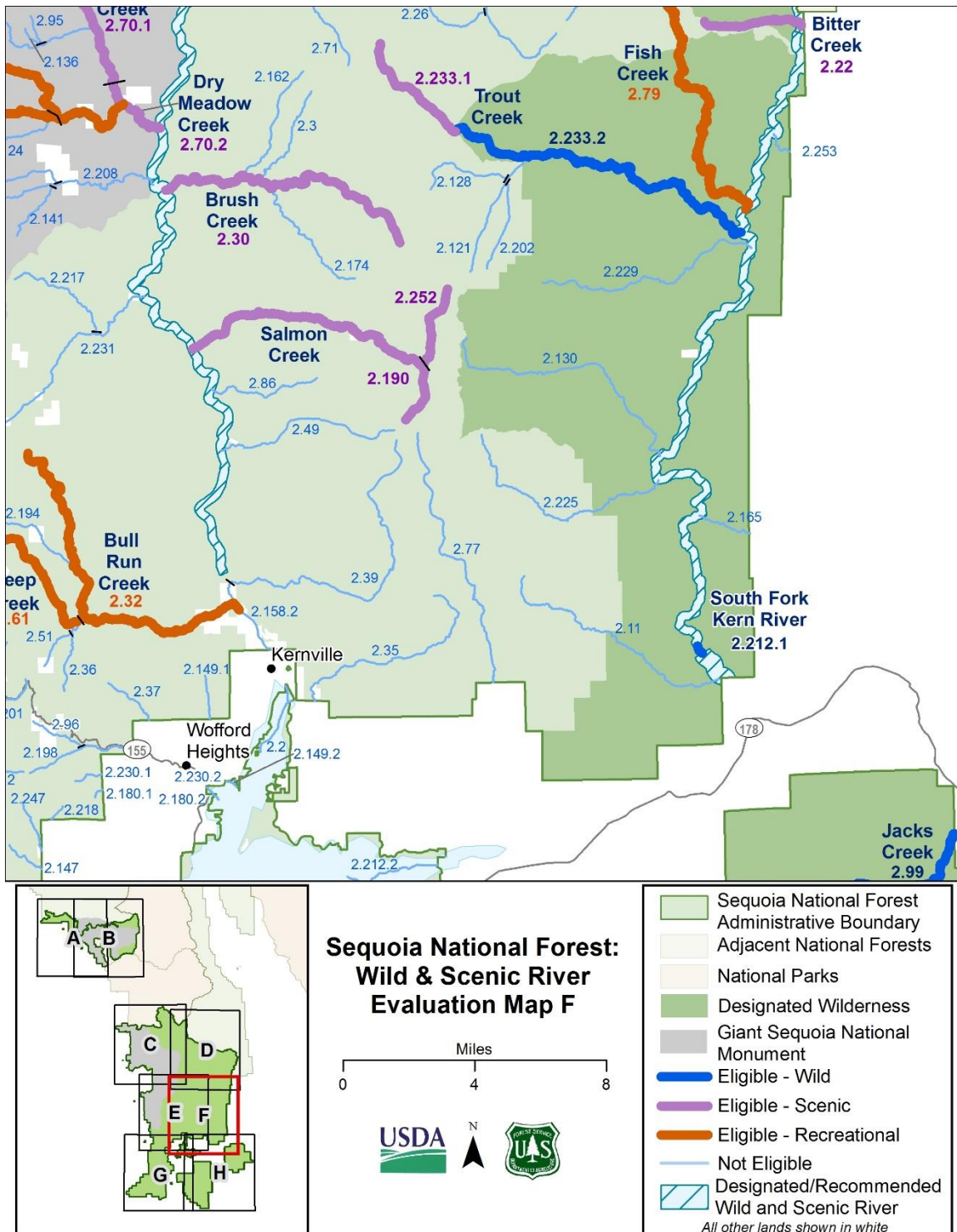


Map C-5. Sequoia National Forest Wild and Scenic River Evaluation Map C

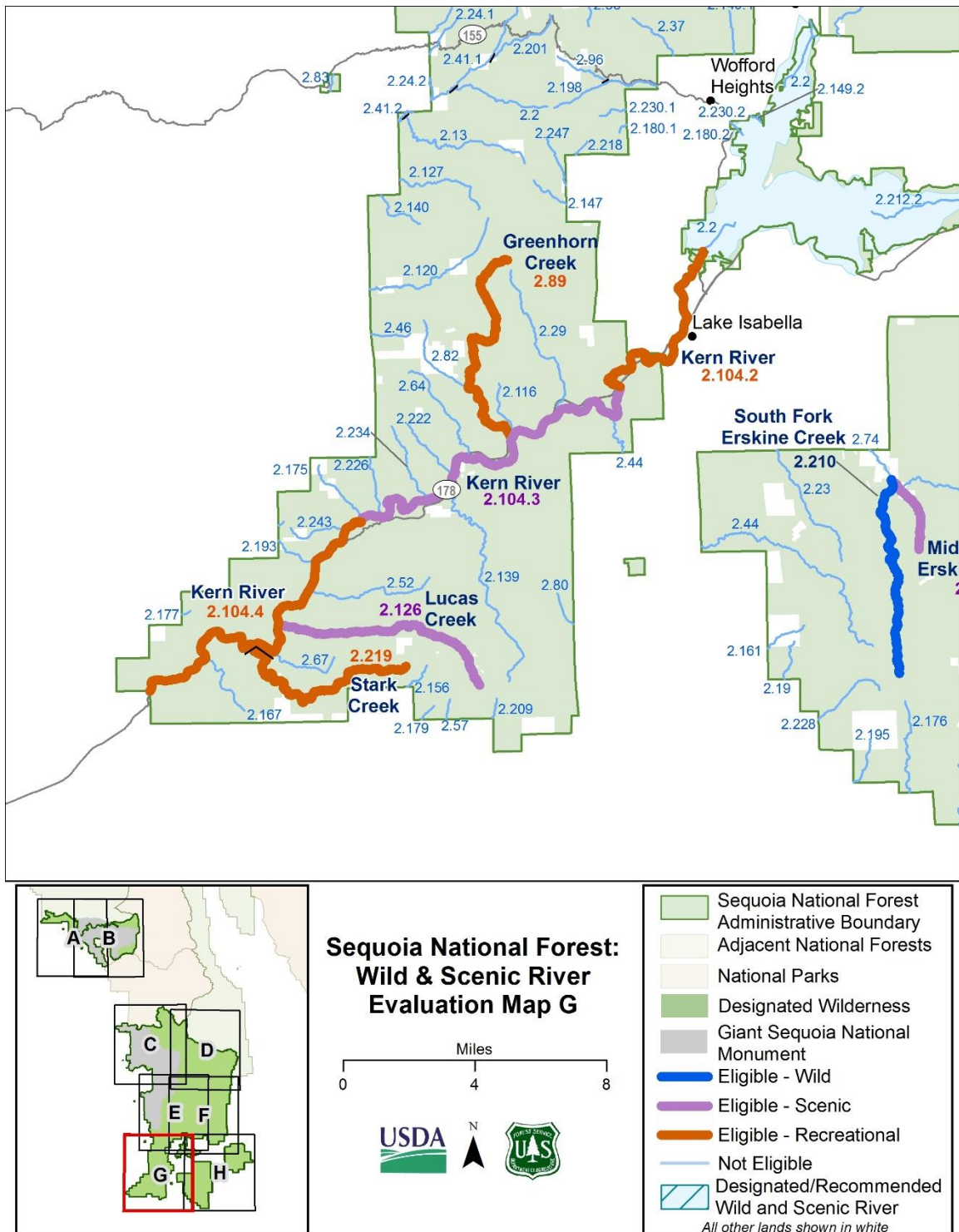


Map C-6. Sequoia National Forest Wild and Scenic River Evaluation Map D

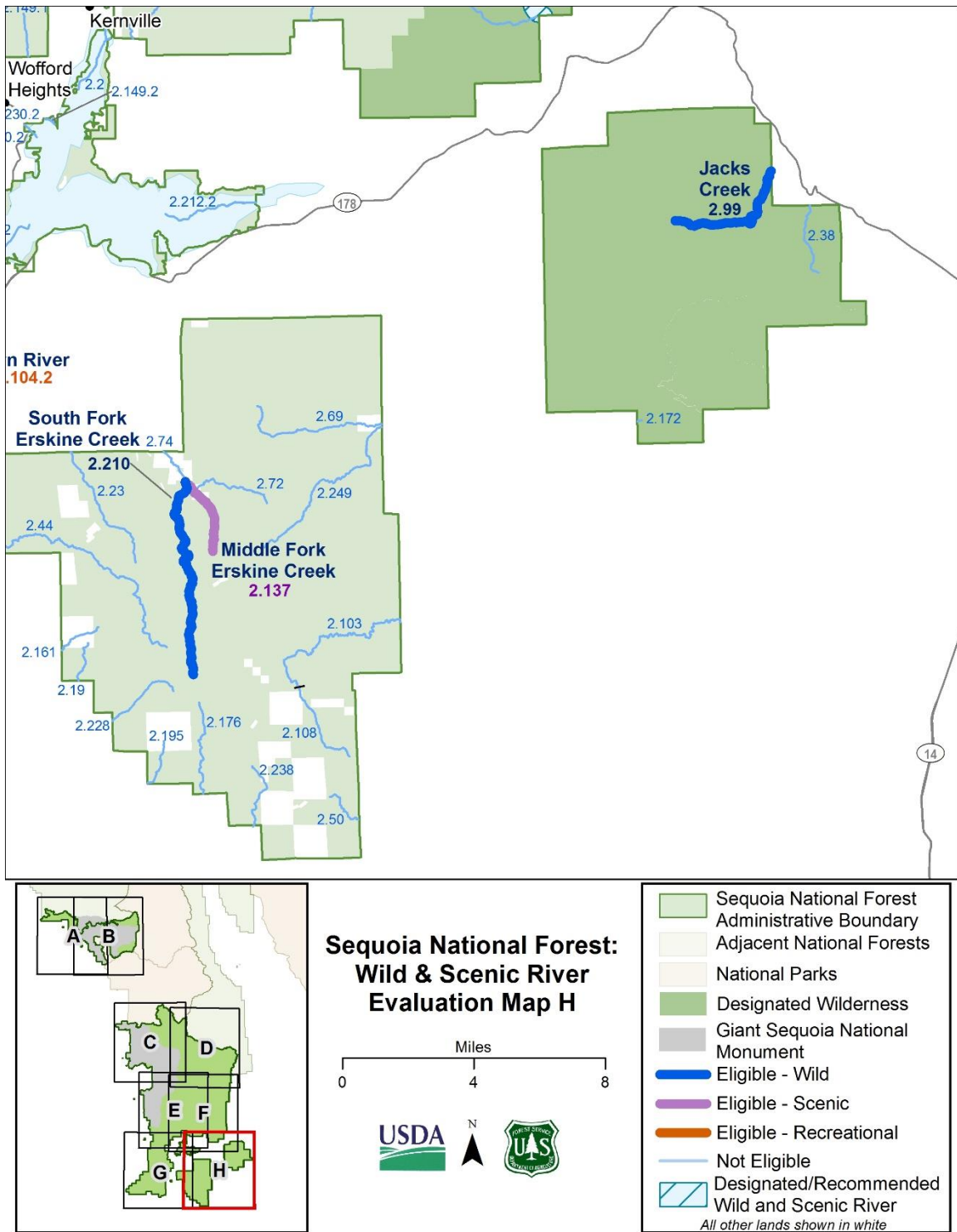




Map C-8. Sequoia National Forest Wild and Scenic River Evaluation Map F



Map C-9. Sequoia National Forest Wild and Scenic River Evaluation Map G



Map C-10. Sequoia National Forest Wild and Scenic River Evaluation Map H

River Segments Not Previously Studied

2 river segments (approximately 6.9 miles) had not been previously studied because at the time of previous studies, the lands surrounding these segments were US Army Corp of Engineers lands, related to Lake Isabella. These lands are now within the Sequoia National Forest and these river segments were included in the current study. Table C-3, the evaluation maps above, and Map C-19 provide more information about these river segments.

Table C-3. Sequoia National Forest river segments not previously studied

Segment Name	GIS Number	Mileage	Free Flow
South Fork Kern River	2.212.2	3.1	No, Lake Isabella (Reservoir) impedes natural flow
Kern River	2.2	3.8	No, Lake Isabella (Reservoir) impedes natural flow
Total	-	6.9	-

River Segments Previously Studied

In 1987, Congress designated the North Fork Kern River and South Fork Kern River and the South Fork of the Kings River as wild and scenic rivers. In addition, in 1991, the Sequoia National Forest determined that segments of the Little Kern River, Kern River, North Fork Tule River, North Fork Middle Fork Tule River, and Kings River were eligible for inclusion in the National Wild and Scenic Rivers System. In total, including the segments previously determined eligible, one segment on the lower South Fork Kern was found suitable and was recommended but not designated in 1987. 268² river segments (approximately 1,058.4 miles) were previously studied in 1991. These river segments were included in the current study. 264 of these river segments (approximately 1,039.6 miles) are free flowing and 4 river segments (approximately 18.8 miles) are not free flowing. Table C-1, Table C-4, the evaluation maps above, Map C-19, and the River Segment Details section below provide more information about these river segments.

Table C-4. Sequoia National Forest river segments previously studied and not free flowing

Segment Name	GIS Number	Mileage	Free Flow
Kings River	2.106.4	17.5	No, under Pine Flat Reservoir
Tenmile Creek	2.227.2	0.6	No, under Hume Lake (Reservoir)
Rattlesnake Creek	2.180.2	0.5	No, Lake Isabella (Reservoir) impedes natural flow
Nellie Dent Creek	2.149.2	0.2	No, Lake Isabella (Reservoir) impedes natural flow
Total	-	18.8	-

54 river segments (approximately 341 miles) are eligible because they have free flow and outstandingly remarkable values. Table C-5, the evaluation maps above, Map C-19, and the River Segment Details section below provide more information about these river segments.

²Includes 4 river segments (approximately 30.2 miles) of the Lower Kings River (from elevation 1595 to the National Forest boundary). For the purposes of this study, the Lower Kings River was included within the Sequoia National Forest river segments. In another previous eligibility study, these segments were included within the Sierra National Forest, as described below in the Sierra National Forest, River Segments Previously Studied section.

Table C-5. Sequoia National Forest Wild and Scenic River Eligibility Study Results Summary

Study Results	# of River Segments	Approximate Mileage
Total Eligible	54 ³	341
Preliminarily Classification: Wild	29	155.5
Preliminarily Classification: Scenic	13	89.6
Preliminarily Classification: Recreational	12	95.9

Region of Comparison

- **Scenery** – Sequoia National Forest. The southern location at the edge of the Sierra Nevada range and other distinctive physical and natural characteristics distinguishes the Sequoia National Forest from neighboring national forests. Although the geologic composition may be similar to the rest of the range, the exceptionally steep slopes were carved by swift white-water rivers and creeks. The rivers and creeks draining the western slope of the forest have some of the steepest elevation drops of any rivers in the Sierra Nevada. The western slopes of the Greenhorn Mountains and the Kern Plateau are wet and have many springs, seeps, stringer meadows and perennial creeks, in sharp contrast to eastern slopes that are dry and arid. High elevation forests quickly transition into dry, eastside deserts in the east and south, and into the granitic foothills of the Central Valley covered with oak woodlands on the west side. Due to the unique conditions influencing the unusually high diversity within the forest, the region of comparison for scenery is the Sequoia National Forest.
- **Recreation** – Southern California: Kern, San Diego, Tulare, Ventura, and Los Angeles Counties. The majority of visitors to Sequoia National Forest are from very dry and urban counties in Southern California. Since recreation values are tied to visitors, the region of comparison for recreation is the Southern California counties where the majority of visitors are from.
- **Geology** – Sequoia National Forest and the southern half of Sequoia and Kings Canyon National Parks. The Sequoia National Forest has several mountain ranges divided by steep canyons. Further north, within the Sierra National Forest and the northern half of Sequoia and King Canyon National Parks, more extensive glaciation occurred, resulting in large rounded valleys (such as Kings Canyon) and alpine lakes. The Sequoia National Forest is somewhat different, geomorphologically, because the landscape has been less affected by glaciers. The Kings and Tule Rivers both drop down from high elevation and have extremely deep and highly dissected canyons. The watercourse of the Tule River is shorter and less gradual than the Kings River. However, Kings Canyon is one of the deepest canyons in the country. The Sequoia National Forest transitions from the highest elevations of the Sierra Nevada range into the lower Kern Valley, and also rising into the Breckinridge, Scodie, Piute, and Tehachapi Mountains. The substantial volcanic flows prevalent on the Inyo National Forest are not present on the Sequoia National Forest. While the Sequoia National Forest is part of the Southern Sierra Nevada Mountain Range, since the geologic processes that shaped the landscape are very different, the region of

³ Includes 3 river segments (approximately 12.7 miles) of the Lower Kings River (from elevation 1595 to the high water line of Pine Flat Reservoir). For the purposes of this study, the Lower Kings River was included within the Sequoia National Forest river segments. However, in a previous eligibility study, these segments were included within the Sierra National Forest, as described below in the Sierra National Forest, River Segments Previously Studied section.

comparison for geology is the Sequoia National Forest and the southern half of Sequoia and Kings Canyon National Parks.

- **Fish** – State of California. Native trout on the Sequoia National Forest are unique heritage fish. The State of California has 11 native heritage trout, three of which are golden trout species and present on the Sequoia National Forest. Golden trout are the State Fish of California. Golden trout are only found in the Kern River watershed. Due to the high interest in California for conservation and angling for heritage trout, the region of comparison for fish populations and habitat is the State of California.
- **Wildlife** – Southern Sierra Nevada Mountain Range and nearby areas (Sequoia National Forest, Sierra National Forest, Inyo National Forest, and Sequoia and Kings Canyon National Parks). The Sequoia National Forest is in a Mediterranean ecosystem and has many months with no rain. In addition, the areas of the forest in the rain shadow of the Greenhorn Mountains are very dry. This elevates the importance of water sources for most wildlife. Several species are associated with creeks all the time. Several endemic species of salamander are present in and along creeks or rivers year round. Most birds and mammals move around and use these areas as corridors and for food and water. Just as an oasis in the desert attracts many wildlife, many perennial creeks and rivers on the Sequoia National Forest attract and are essential to wildlife. Since some species are endemic to the Sequoia National Forest, and some are found throughout the Southern Sierra Nevada Mountain Range, the region of comparison for wildlife populations and habitat is the Southern Sierra Nevada Mountain Range and nearby areas (Sequoia National Forest, Sierra National Forest, Inyo National Forest, and Sequoia and Kings Canyon National Parks).
- **Prehistory/Cultural** – Sequoia National Forest. The Sequoia National Forest is the region of comparison for prehistory because it encompasses the geographic extent of cultural resource property data known to and maintained by the Sequoia National Forest.
- **History** – Sequoia National Forest. The Sequoia National Forest is the region of comparison for history because it encompasses the geographic extent of cultural resource property data known to and maintained by the Sequoia National Forest.
- **Botany** – Nationwide for Giant Sequoia groves. Southern Sierra Nevada Mountain Range for Botanic Areas and Piute Cypress groves. The region of comparison is nationwide for Giant Sequoia groves because Sequoia National Forest is nationally known for its Giant Sequoia groves. The Southern Sierra Nevada Mountain Range is the region of comparison for Botanic Areas because Botanic Areas were first defined for the unique, endemic, and rare plants present in the areas by comparing across the Sequoia National Forest and the Southern Sierra Nevada Mountain Range to determine which plant species are unique.

Outstandingly Remarkable Values

The Interagency Wild and Scenic Rivers Coordinating Council technical paper “The Wild and Scenic River Study Process,” describes the baseline criteria for outstandingly remarkable scenery, recreation, geology, fish and wildlife populations and habitat, prehistory/cultural, and history values. Outstandingly remarkable botanical values are based upon unique and rare plants and vegetation types. The Sequoia National Forest interdisciplinary team identified the following additional criteria for determining if any river-related values are outstandingly remarkable values:

Scenery – Scenic attributes of the Sequoia National Forest are particularly rich in visual diversity and visual contrast tied to the multiple “transition zones” associated with the unique physical and

biological characteristics described in the Region of Comparison. When analyzing scenic values, additional factors were considered such as scale of cultural modifications, and the length of time negative intrusions are viewed. Additional criteria for outstandingly remarkable scenery are:

- Riparian areas with exceptionally high contrast in high desert and dry forest environments with tumbling creeks, waterfalls, cascades, and stringer meadows.
- Rivers segments that exhibit unique or exemplary visual diversity traveling through multiple transition zones.
- Rivers segments with unique assemblages of vegetation.
- Rivers segments with granite basins, slides, waterfalls, and drops creating unique or exemplary visual features or attractions.
- Views of exemplary or unique geologic features such as exemplary features formed by glaciation, granitic domes, spires, and steep and diverse topography.

Recreation – Recreation opportunities are, or have the potential to be, popular enough to attract visitors from throughout and beyond the region of comparison, or are unique or rare within the region. Visitors are willing to travel long distances to use river resources for recreation purposes. Recreation opportunities tied to water bodies are highly valued experiences on the Sequoia National Forest. The Sequoia National Forest is well known for exceptional whitewater rivers and creeks in natural settings with high natural diversity. River-related recreation opportunities may include, but are not limited to, sightseeing, wildlife observation, camping, photography, hiking, fishing, hunting and boating. The Sequoia National Forest provides exceptional opportunities to participate in the activities of whitewater kayaking and rafting as well as fishing for native heritage trout. Additional criteria for outstandingly remarkable recreation are:

- River segments that provide visitors exemplary opportunities to enjoy Giant Sequoias alongside rivers and creeks.
- River segments that provide high quality whitewater kayaking and rafting opportunities.
- River segments that provide opportunities to fish heritage trout waters as determined by the State of California.
- River segments that attract national or regional events dependent on the river-related values.
- River segments that provide recreation settings that provide exemplary diverse recreation opportunities.

Geology – Criteria for outstandingly remarkable geology include bedrock, landforms, and relief or elevation change, and scientific value:

- **Unique Bedrock Features:** Bedrock with unusual or outstanding geologic or geomorphic features and river corridors with an abundance of unusual, unique, and distinctive geologic or geomorphic features may have high value or be outstandingly remarkable. The types of features identified as having high value included highly unusual channels, marble outcrops, stratigraphy, volcanic evidence, historic floods, and steep, narrow canyons with series of stringer meadows, or waterfalls and pools.

- **Unique Landforms:** Landforms with unusual or outstanding geologic features may have high value or be outstandingly remarkable.
- **Relief or Elevation Change:** River segments that drop over 4,000 feet through steep canyons or over waterfalls be outstandingly remarkable. Consideration of several segments of the river may be necessary to evaluate this criterion.
- **Scientific:** Windy Gulch Geologic Area and Packsaddle Cave Geologic Area were set aside for to preserve examples of unique geologic features for scientific study. Slate Mountain Botanic Area is a band of metamorphic rock at 9,000 feet that creates edaphic endemic plant habitats. Bodfish Piute Botanic Area is defined by a pluton of Bodfish olivine gabbro that supports the largest grove of the highly endemic Piute Cypress tree.

Fish – Criteria for outstandingly remarkable fish may be judged on the relative merits of either fish populations, habitat, or a combination of these river-related conditions. Criteria for outstandingly remarkable fish populations and habitat are:

- **Population:** Criteria vary by species, status of native populations, and whether recovery of a native trout species will occur in these creeks. The presence of unique endemic heritage native trout which are only found in the Kern River indicates an outstandingly remarkable value, including any river segment that contains a healthy or remnant population of Golden Trout, Kern River Rainbow Trout, or Little Kern Golden Trout.
- **Habitat:** Criteria vary by watersheds and is strongly related to fish historic distributions and presence of healthy or remnant populations. River segments where native heritage trout are present in a stable population are outstandingly remarkable. River segments that support populations that best exemplify indigenous strains of native trout within their historic drainages may be outstandingly remarkable. River segments where remnant populations exist or native pure trout will be re-introduced are outstandingly remarkable.

Wildlife – Criteria for outstandingly remarkable wildlife may be judged on the relative merits of either terrestrial or aquatic wildlife populations, habitat, or a combination of these river-related conditions. Criteria for outstandingly remarkable wildlife populations and habitat are:

- **Population:** The river segment, or area within the corridor, contains important populations of unique, endemic species and/or populations of federal or state-listed (or candidate) threatened, endangered, or sensitive species. Diversity of species is an important consideration and may, in itself, be outstandingly remarkable.
- **Habitat:** The river segment, or area within the corridor, provides exceptionally high quality habitat for wildlife of regional significance, and/or may provide unique habitat or a critical link in habitat conditions for federal or state-listed (or candidate) threatened, endangered, or sensitive species. The presence of suitable habitat for listed species may, in itself, be outstandingly remarkable. Diversity or connectivity of habitats is an important consideration for riparian areas and is river-related. Connectivity of habitat in a xeric environment may, in itself, be outstandingly remarkable.

Prehistory and History – An important interrelationship must exist between documented cultural sites and the river segment. Criteria for outstandingly remarkable prehistory and history are:

- **Prehistory:** The river segment, or area within the corridor, contains a site or multiple sites where there is evidence of occupation or use by Native Americans. Sites must have unique or rare characteristics or exceptional human interest value or values. Sites may have national or regional importance for interpreting prehistory, may be rare and represent an area where a culture or cultural period was first identified and described, may have been used concurrently by two or more cultural groups, and/or may have been used by cultural groups for rare sacred purposes. Many such sites are listed on the National Register of Historic Places, which is administered by the National Park Service.
- **History:** The river segment, or area within the corridor, contains a site, multiple sites, a feature, or multiple features associated with a significant event, an important person, or a cultural activity of the past that was rare or one-of-a-kind in the region. Many such sites are listed on the National Register of Historic Places. In most cases, historic sites or features are 50 years old or older.

Botany – The Sequoia National Forest is known for its Giant Sequoia groves (*Sequoiadendron giganteum*), which are rare ecological treasures. The presence of a Botanic Area on a river segment, or within the corridor, is indicative of a unique plant association. Criteria for outstandingly remarkable botany are:

- **Giant Sequoia groves:** Giant Sequoia groves are heavily dependent on moisture and deep soils to grow. The presence of Giant Sequoia groves is associated with wetter creeks and rivers. Giant Sequoia groves within the corridor that are free of roads and motorized trails are outstandingly remarkable.
- **Botanic Areas:** The unique, endemic, and rare plants found within the botanic areas are heavily dependent on moisture and associated with creeks. Botanic Areas within the corridor are outstandingly remarkable.
- **Piute Cypress groves:** The unique, endemic, and rare species of Piute Cypress are heavily dependent on moisture, including creeks. Piute Cypress groves within the corridor are outstandingly remarkable.

River Segment Details

Alpine Creek (GIS Number 2.7)

Location

- County: Tulare
- Beginning Point: About 1 mile east of Maggie Mountain at 8800', 1/2 mile north of the Golden Trout Wilderness boundary at 31E14
- End Point: Confluence with Little Kern River at 32E08 T.19S. R.32E. Sec.33
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 7.2
- Eligible: 7.2

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Alpine Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: High

Classification: Wild

Angora Creek (GIS Number 2.8)

Location

- County: Tulare
- Beginning Point: East slope of Angora Mountain at 8800'
- End Point: Confluence with North Fork Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 1.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: Two National Forest System trails cross Angora Creek close to its confluence with the North Fork Kern River, providing access for hiking and horse riding in a primitive setting. Near the confluence with the North Fork Kern River, a wide, fairly flat area provides an attractive and primitive setting to camp.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Similar hiking, horse riding, and camping opportunities are available along many other tributaries of

the Kern River in the Golden Trout Wilderness. These opportunities are not unique or rare and visitors do not specifically seek out this location for hiking, horse riding, or camping and visitors have alternate routes and locations to enjoy the same activities within a primitive setting. Therefore, recreation is not considered outstandingly remarkable.

- **Geology**

- ♦ Description: The headwaters of Angora Creek start below Angora Mountain (10,198 feet) in glacial cirques and meadows on the east side of Coyote ridge. It tumbles down 4,400 feet to its confluence with the North Fork Kern River. This confluence is also the southern extent of Tahoe age glaciation. This filled the Kern canyon with 1,000 feet of ice and carved the characteristic U shape of this portion of the Kern Canyon. Also, in this area is the massive Kern canyon landslide of 1860, which formed the unusual Little Kern Lake, along the Kern River.
- ♦ Determination: Geology is not an outstandingly remarkable value. Similar geologic features also exist elsewhere within the region of comparison and the features within the Angora Creek corridor do not represent a unique or rare combination of geologic features. Therefore, geology is not considered outstandingly remarkable.

- **Prehistory**

- ♦ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ♦ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

- **History**

- ♦ Description: Includes identified and documented historic sites.
- ♦ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is not considered outstandingly remarkable.

Summary: Angora Creek is ineligible because it has no outstandingly remarkable values.

Bear Creek (GIS Number 2.17)

Location

- County: Tulare County
- Beginning Point: South of Belknap Complex Grove at 6800' T.21S. R.35E. Sec.3
- End Point: Confluence with South Fork Middle Fork Tule River near Coy Flat
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 2.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Botany**
 - ◆ Description: Bear Creek is a small perennial creek and its tributaries provide water within the Belknap Giant Sequoia Grove.
 - ◆ Determination: Botany is not an outstandingly remarkable value. Bear Creek is similar to many other small creeks that provide water within other Giant Sequoia groves. There are other creeks that meander within groves that have a better direct interaction with the understory and ecology of the grove. Therefore, botany is not considered outstandingly remarkable.

Summary: Bear Creek is ineligible because it has no outstandingly remarkable values.

Belknap Creek (GIS Number 2.20)

Location

- County: Tulare
- Beginning Point: Below 31E24 at 7800' T.20S. R.31E. Sec.22
- End Point: Confluence with South Fork Middle Fork Tule River at Belknap Campground in Belknap Grove
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 2.3
- Eligible: 2.3

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: Belknap Creek begins below Jordon Peak and flows to the South Fork Middle Fork Tule River. Belknap Campground is located near the confluence. Several roads cross the creek.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. The campground and roads are not river-related. Therefore, recreation is not considered outstandingly remarkable.

- **Geology**

- ♦ Description: Belknap Creek begins at over 9,000 feet and drops 4,000 feet to confluence with the South Fork Middle Fork Tule River. It begins in the high elevations in the Wishon Tule roof pendant, passes through a massive granite pluton and rejoins the roof pendent near its confluence with the South Fork Middle Fork Tule River. The metasedimentary rocks found in the Wishon Tule roof pendent include schist, slate, and marble. Halfway down along Belknap Creek is the flat-topped perch of McIntyre Rock, a 350-foot tall granite face coming out of the slope and forest, along the Hossack Trail.
- ♦ Determination: Geology is an outstandingly remarkable value.

- **Prehistory**

- ♦ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ♦ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

- **History**

- ♦ Description: Includes identified and documented historic sites.
- ♦ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Belknap Creek is eligible because of geology, prehistory, and history are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Some use of springs in the watershed by recreation and residence homes but these uses do not influence flow in this perennial creek

Shoreline Development: Roads, very small residential tract, campground

Accessibility: Roads

Water Quality: Good

Classification: Recreational

Bitter Creek (GIS Number 2.22)

Location

- County: Tulare
- Beginning Point: Springs at Tussock Bench 7200' T.22S. R.35E. Sec.3
- End Point: Confluence with South Fork Kern River
- Special Area: Along the southern boundary of the South Sierra Wilderness

Mileage

- Studied: 3.3
- Eligible: 3.3

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: This creek provides a high quality opportunity to fish for golden trout and is designated by the State of California as a Heritage Trout Water. Visitors easily access this creek from Sherman Pass Road (22S05) and fish this creek for the State Heritage Trout Challenge.
 - ◆ Determination: Recreation is an outstandingly remarkable value. Visitors from outside the region of comparison are drawn to this creek to fish for golden trout and participate in the State Heritage Trout Challenge. Easy access by vehicle makes this creek especially attractive. Therefore, recreation is considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Bitter Creek is designated by the State of California as a Heritage Trout Water because it is an outstanding example of native population and habitat for golden trout.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Forest service sensitive species found in this area include Fisher, Marten, and Great Gray Owls.
 - ◆ Determination: Wildlife Population and Habitat are not outstandingly remarkable values. Fisher, Marten, and Great Grey Owls are not associated specifically with the creek. Connectivity of habitat for fisher is more important in other areas. Marten may use the area, but there are many other similar creek corridors in the area. While Great Grey Owls have been found in this area, no meadows exist along this creek, so they may only use the area occasionally and it is unlikely to be a focus area for Great Gray Owls. Therefore, wildlife population and habitat are not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

- **History**

- ◆ Description: Includes identified and documented historic sites.
- ◆ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is not considered outstandingly remarkable.

Summary: Bitter Creek is eligible because recreation, prehistory, and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Roads and camping

Accessibility: Road and motorized trails

Water Quality: Good

Classification: Scenic

Bone Creek (GIS Number 2.25)

Location

- County: Tulare
- Beginning Point: T.22S. R.31E. Section 27 at 7,000 feet near Table Mountain
- End Point: Confluence with Nobe Young Creek
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 4.5
- Eligible: 4.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Habitat)**

- ◆ Description: Bone Creek is a perennial creek that supports sterile rainbow trout. It is one of the areas slated for reintroduction of Kern River Rainbow Trout (KRRT) in 2021. The large effort by the State of California, the Kern River Fisheries Enhancement Fund, the Sequoia National Forest, and other stakeholders will contribute to the resilience of the species within its native range and aid in the recovery.
- ◆ Determination: Fish Habitat is an outstandingly remarkable value.

Summary: Bone Creek is eligible because fish habitat is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Roads and camping

Accessibility: Roads and motorized trails

Water Quality: Good

Classification: Recreational

Boulder Creek (GIS Number 2.28)

Location

- County: Fresno
- Beginning Point: Jennie Lake in Jennie Lakes Wilderness at 9,000 feet
- End Point: Confluence with South Fork Kings River at 3500 ft. at Windy Cliffs Geologic Area
- Special Areas: Giant Sequoia National Monument, Jennie Lakes Wilderness, Monarch Wilderness

Mileage

- Studied: 11.6
- Eligible: 11.6

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: The Kanawyers Trail intersects Boulder Creek and visitors camp near the creek in this area. Boulder Creek cascades down the narrow canyon, forming numerous deep pools and a rockslide that visitors hike to. Boulder Creek flows under the remnants of an old bridge and a trail to Boyden caverns is within the corridor.
 - ◆ Determination: Recreation is not an outstandingly remarkable value
- **Geology**
 - ◆ Description: Boulder Creek headwaters start at 10,300 feet on Mitchell Peak, Buck Rock, and the Jenny Lakes Wilderness. Boulder Creek drops down 7,000 feet to the South Fork Kings River. Most of the drainage is Cenozoic plutonic granite but lower third of Boulder Creek passes through the meta-volcanic dacite and metasedimentary slate/phyllite/quartzite/marble of the Boyden Cave roof pendent.
 - ◆ Determination: Geology is an outstandingly remarkable value. Due to the elevation drop from the headwaters to the South Fork Kings River, geology is considered outstandingly remarkable.

Summary: Boulder Creek is eligible because geology is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Non motorized trail accesses one area of the creek within wilderness. Two roads intersect the middle section of wilderness. The Kings Canyon National Scenic Byway goes over the lower Boulder Creek as it drops into the Kings Canyon.

Water Quality: Good

Classification: Wild

Brush Creek (GIS Number 2.30)

Location

- County: Tulare
- Beginning Point: T.23S. R.34E. Sec.7 south of Mosquito Meadow at 9500'
- End Point: Confluence with the North Fork Kern River
- Special Area: None

Mileage

- Studied: 9.9
- Eligible: 9.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Brush Creek drops 6,300 feet from the wet meadows and forests of the west Kern Plateau to the North Fork Kern River at Johnsondale Bridge. The last 1.5 miles before the North Fork Kern River is a spectacular series of whitewater falls, slides, and pools over slick granite bedrock. The rushing whitewater contrasts sharply with the arid landscape of the Kern River Canyon.
 - ◆ Determination: Scenery is an outstandingly remarkable value. The harsh environmental conditions and the striking contrast between whitewater and the arid environment, as well as the sheer power of the rushing water carves outstanding, unique, and exemplary visual features. The series of granitic slides, waterfalls, and basins are unequalled in the area. Therefore, scenery is considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: The Cannell Meadow Trail and the Rincon Trail provide hiking access. Dispersed camping opportunities are available at some locations. The State of California is proposing to restock Kern River Rainbow Trout to this creek's remnant population which would provide a quality fishing opportunity. The series of falls,

slides, and pools is popular for whitewater kayaking and each year the Kern River Festival holds the Brush Creek Extreme Race in April.

- ◆ Determination: Recreation is an outstandingly remarkable value. The outstanding water features and scenery draw whitewater kayakers from outside the region of comparison. The creek provides a setting for competitive events and supports a regional festival. In the future, there will be a quality opportunity to fish for native heritage trout in their historic range. Therefore, recreation is considered outstandingly remarkable.

- **Geology**

- ◆ Description: The headwaters of Brush Creek begin in the Durrwood Meadows area on the Kern Plateau at just below 10,000 feet. This steep creek drops 6,200 feet vertical in only 13 river miles, to its confluence with the North Fork Kern River. The upper watershed is underlain by older Pre-Cretaceous granitic plutons and metamorphic sedimentary schists, slates, phyllite, and hornfels. The western lower portion of Brush Creek is a younger highly competent Mesozoic Granitic pluton which display an absence of major jointing. As such, the western lower reach of Brush Creek has continuous beautiful bedrock controlled pools and riffles. Right before its confluence with the North Fork Kern River, Brush Creek crosses the Kern Canyon Fault, a right-lateral major fault within the Sierra Nevada Micro-plate. The western side of the fault is displaced six miles to the north, compared to the eastern side. In this area, the Fairview metamorphic block shows a spectacular un-eroded marble band ridge tilted almost vertically into the sky.
- ◆ Determination: Geology is an outstandingly remarkable value. The combination of significant vertical relief, outstanding diversity of geologic bedrock/features, continuous granite pools, and the prominent marble band ridge are unique within the region of comparison. Therefore, geology is considered outstandingly remarkable.

- **Fish (Population and Habitat)**

- ◆ Description: While Brush Creek has a series of barriers to fish passage on it, the lower elevation sections contain remnant populations of Kern River Rainbow Trout (KRRT) and good quality habitat. It is important for the maintenance of genetic diversity in KRRT and it is one of the areas slated for reintroduction of KRRT. The large effort by the State of California, the Kern River Fisheries Enhancement Fund, the Sequoia National Forest, and other stakeholders will contribute to the resilience of the species within its native range and aid in the recovery.
- ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

- **Wildlife (Population and Habitat)**

- ◆ Description: Above the falls on Brush Creek that are barriers to fish passage, Mountain Yellow-legged frogs have occurred and occupancy is unknown at this time. This area contains suitable habitat for this species. Kern Plateau Slender Salamanders, a Species of Concern associated with meadows riparian areas, seeps, and creeks, have been found in the area.
- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Due to the presence of rare and endemic species, wildlife population and habitat are considered outstandingly remarkable.

Summary: Brush Creek is eligible because scenery, recreation, geology, fish population and habitat, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Campground in lowest part of creek

Accessibility: Roads in lower and upper areas, nonmotorized trails in some areas

Water Quality: High

Classification: Scenic

Bull Run Creek (GIS Number 2.32)

Location

- Counties: Tulare, Kern
- Beginning Point: Below the east slope of Tobias Peak at Fox Meadows 7000' T.24S. R.32E. Sec.8
- End Point: Confluence with North Fork Kern River at Riverkern, south of the Kern County line
- Special Area: None

Mileage

- Studied: 12.4
- Eligible: 12.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Right before its confluence with the North Fork Kern River, Bull Run Creek crosses the Kern Canyon Fault, a right-lateral major fault within the Sierra Nevada Micro-plate. The western side of the fault is displaced six miles to the north, compared to the eastern side. In this area, the Fairview metamorphic block shows a spectacular un-eroded marble band ridge tilted almost vertically into the sky.
 - ◆ Determination: Geology is an outstandingly remarkable value. The combination of geologic features is rare and unusual. Therefore, geology is considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.

- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **History**
 - ◆ Description: Includes identified and documented historic sites.
 - ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Bull Run Creek is eligible because geology, prehistory, and history are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Roads and motorized trails

Water Quality: Good

Classification: Recreational

Cabin Creek (GIS Number 2.34)

Location

- County: Fresno
- Beginning Point: Northwest Converse Grove area at 6100' T.13S. R.28E. Sec.5
- End Point: Confluence with mainstem Kings River
- Special Areas: Giant Sequoia National Monument, Kings River Special Management Area

Mileage

- Studied: 2.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Cabin Creek drops steeply from the Cabin Creek Giant Sequoia Grove with views of the Kings River gorge.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. All of the creeks flowing off of this north facing slope of the Kings River gorge have views of this spectacular canyon and they are not unique or exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Botany**

- ◆ Description: Cabin Creek drains Cabin Creek Giant Sequoia Grove.
- ◆ Determination: Botany is not an outstandingly remarkable value. The creek is similar to several others along the Kings River and Tule River that also drain Giant Sequoia groves and it is not unique or exemplary. Therefore, botany is not considered outstandingly remarkable.

Summary: Cabin Creek is ineligible because it has no outstandingly remarkable values.

Cane Creek (GIS Number 2.37)

Location

- County: Kern
- Beginning Point: Below Cane Spring at 5800' T.25S. R.32E. Sec.14
- End Point: Forest Boundary north of Cane Peak (connects to private section that goes to Tillie Creek)
- Special Area: None

Mileage

- Studied: 1.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Cane Creek begins below Black Mountain and falls steeply through a dry landscape to Wofford Heights with sweeping views of the Kern River Valley.
- ◆ Determination: Scenery is not an outstandingly remarkable value. Sweeping views of the Kern River Valley are not unique and the views from Cane Creek are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Geology**

- ◆ Description: Metamorphic roof pendant, large marble outcrop occurs in this area.
- ◆ Determination: Geology is not an outstandingly remarkable value. Metamorphic roof pendant exposure and large marble outcrops occur in several locations in the southern end of the Sequoia National Forest. The geology in the Cane Creek watershed is not unique or exemplary. Therefore, geology is not considered outstandingly remarkable.

- **Botany**

- ◆ Description: The dry open landscape supports endemic Piute Cypress in the higher elevation areas.

- ◆ Determination: Botany is not an outstandingly remarkable value. Piute Cypress occur in several locations in the southern end of the Sequoia National Forest. The groves near Cane Creek are not exemplary. Therefore, botany is not considered outstandingly remarkable.

Summary: Cane Creek is ineligible because it has no outstandingly remarkable values.

Cedar Creek (GIS Number 2.41.1)

Location

- County: Tulare
- Beginning Point: At 6,000 feet off the southern side of Sunday Peak T25S R 32E
- End Point: Forest Boundary near Poso T25S R31E
- Special Area: None

Mileage

- Studied: 5.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Cedar Creek drains the South Peyrone giant sequoia grove beginning at Onion Meadow. It flows through the forest through a wide, incised canyon with granite outcrops where it enters the Tule River Reservation. Although the creek is very beautiful as it flows through the forest the scenic character is not unlike many other creeks that drain giant sequoia groves within the region of comparison.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although the creek is very beautiful as it flows through the forest the scenic character is not unlike many other creeks that drain giant sequoia groves within the region of comparison. Because the river related value is not unique, or exemplary within the region of comparison the scenery river related value is not determined to be outstandingly remarkable. Because the river related value is not unique, or exemplary within the region of comparison the scenery river related value is not determined to be outstandingly remarkable.
- **Wildlife**
 - ◆ Description: All rivers and creeks and springs in the dry environment are very valuable to wildlife. The river related value is not unique, or exemplary within the region of comparison.
 - ◆ Determination: Wildlife is not an outstandingly remarkable value. It is our determination that this is not an ORV for wildlife.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

- **History**

- ◆ Description: Includes identified and documented historic sites.
- ◆ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is not considered outstandingly remarkable.

Summary: Cedar Creek is ineligible because it has no outstandingly remarkable values.

Clear Creek (GIS Number 2.44)

Location

- County: Kern
- First
- Beginning Point: Around 7000' near Brown Meadow T 28S R 33E
- End Point: Forest boundary at 3800' T.28S. R.33E. Sec.6
- Second
- Beginning Point: Forest boundary at 2500' T.27S. R.32E. Sec.22"
- End Point: Confluence with Kern River at Miracle Hot Springs.
- Special Area: None

Mileage

- Studied: 10.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Clear Creek begins below Piute Peak and flows to the Kern River through a steep, dry landscape. The riparian area contrasts sharply with the dry brush lands. Panoramic views of the Kern River Valley can be enjoyed from many locations.

- ◆ Determination: Scenery is not an outstandingly remarkable value. Other, similar riparian areas exist in the Piute Mountains and it does not have unique or exemplary panoramic views or level of visual contrast. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: An OHV trail follows the creek through the Piute Mountains providing an expert challenge for motorcycle and ATV enthusiasts.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. The opportunity for expert OHV use is not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.

Summary: Clear Creek is ineligible because it has no outstandingly remarkable values.

Clicks Creek (GIS Number 2.45)

Location

- County: Tulare
- Beginning Point: T.20S. R.31E. Sec.24 at 7800' north of Log Cabin Meadow
- End Point: Confluence with Little Kern River at t 6000' T.20S. R.32E. Sec.4
- Special Areas: Headwaters within Giant Sequoia National Monument, remainder within Golden Trout Wilderness

Mileage

- Studied: 5.8
- Eligible: 5.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Clicks Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Roads give access to trailhead on Wilderness boundary and nonmotorized trails

Water Quality: Excellent

Classification: Wild

Deadman Creek (GIS Number 2.59)

Location

- County: Tulare
- Beginning Point: T.21S. R31E. Sec.7 north of Solo Peak in Giant Sequoia National Monument Black Mountain Grove
- End Point: Confluence South Fork Middle Fork Tule River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 3.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Botany**
 - ◆ Description: Deadman Creek drains part of the Black Mountain Giant Sequoia Grove.
 - ◆ Determination: Botany is not an outstandingly remarkable value. While the creek is beautiful, it is not exemplary or unique. Therefore, botany is not considered outstandingly remarkable.

Summary: Deadman Creek is ineligible because it has no outstandingly remarkable values.

Deep Creek (GIS Number 2.60)

Location

- County: Tulare
- Beginning Point: West of Angora Mountain at 9000' in Golden Trout Wilderness
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 4.8
- Eligible: 4.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Deep Creek (GIS Number 2.60) is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Deep Creek (GIS Number 2.61)

Location

- County: Tulare
- Beginning Point: North of Panorama Campground in T.24S. R.32E. Sec.30
- End Point: Confluence with Calf Creek
- Special Area: None

Mileage

- Studied: 4.2
- Eligible: 4.2

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Deep Creek has Deep Creek Cave nearby and exhibits Tehachapi Metasedimentary roof pendant with large marble bands. Headwaters are Tobias Creek and the roof pendant run up and down the creek. The deeply incised creek runs through the bands of marble and other metamorphic rocks.
 - ◆ Determination: Geology is an outstandingly remarkable value. Deep Creek Cave, the deep incision of the creek, and the bands of marble and metasedimentary rocks in the

creek are exemplary of the marble and metasedimentary geology on the Sequoia National Forest. Therefore, geology is considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Deep Creek (GIS Number 2.61) is eligible because geology and prehistory are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Roads

Water Quality: Good

Classification: Recreational

Deer Creek (GIS Number 2.63)

Location

- County: Tulare
- Beginning Point: East of Pup Meadow in T.23S. R.32E. Sec 30
- End Point: Forest boundary near Leavis Flat Campground
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 7.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

- **Botany**

- ◆ Description: Deer Creek Giant Sequoia Grove is within the watershed.
- ◆ Determination: Botany is not an outstandingly remarkable value. While this is a lovely creek that flows near a Giant Sequoia grove, other creeks have a better direct interaction with the understory and ecology of the grove. Therefore, it is not unique or exemplary and botany is not considered outstandingly remarkable.

Summary: Deer Creek is ineligible because it has no outstandingly remarkable values.

Dry Meadow Creek (GIS Number 2.69)

Location

- County: Kern
- Beginning Point: T.27S. R.34E. Sec.16 at 6500'
- End Point: Forest boundary past Bob Rabbitt Place in the Piute Mountains
- Special Area: None

Mileage

- Studied: 4.2
- Eligible: 4.2

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: OHV trails cross this creek at the top of the watershed before the creek tumbles down the Bob Rabbit Canyon.
- ◆ Determination: Recreation is not an outstandingly remarkable value. There are no unique or exemplary recreation opportunities available along this creek. Therefore, recreation is not considered outstandingly remarkable.

- **Wildlife (Population and Habitat)**

- ◆ Description: Migratory birds, butterflies, slender salamanders are found in this area.
- ◆ Determination: Wildlife Population and Habitat are not outstandingly remarkable values. This creek is not unique or exemplary. Therefore, wildlife population and habitat are not considered outstandingly remarkable.

- **Botany**

- ◆ Description: Many rare plant communities are present in this area.
- ◆ Determination: Botany is not an outstandingly remarkable value. Other, similar creeks that have rare plants associated with them also exist elsewhere in the area. This creek is not unique or exemplary. Therefore, botany is not considered outstandingly remarkable.

Summary: Dry Meadow Creek (GIS Number 2.69) is ineligible because it has no outstandingly remarkable values.

Dry Meadow Creek (GIS Number 2.70.1)

Location

- County: Tulare
- Beginning Point: At 8400 ft. on Slate Mountain at Freezeout Meadow
- End Point: Center of Sec.15 T.22S. R.32E
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 6.7
- Eligible: 6.7

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: This segment falls steeply from Freeze Out Meadow on Slate Mountain through Horse Canyon, then more gently flowing across the Western Divide Highway, to Lloyd Meadow Road. This beautiful, bedrock controlled creek flows through a variety of forest environments with varying topography. Scenic features include the Alder Slabs, a series of granite slabs forming slides, falls, and basins.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although the views are beautiful, bedrock controlled creeks flowing from high elevations over a variety of forest environments with varying topography, and features such as basins and slides exist elsewhere in the area and are not unique or exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: There are opportunities for hiking, summer water play, and fishing. The Summit National Recreation Trail provides access to Freeze Out Meadow at the headwaters, 32E29 is located at the end of this segment, and multiple National Forest System roads access portions of this segment, however there is no National Forest System trail along the creek. The Alder Slabs form a natural water park of tubs and slides and can be easily accessed by from the Lloyd Meadow Road, which makes them attractive for summer water play. There is easy road access for fishing. Social media has increased the popularity of this attraction.
 - ◆ Determination: Recreation is an outstandingly remarkable value. The Alder Slabs attract visitors for summer water play from inside and outside the region of comparison. These tubs and slides are perhaps the most outstanding "natural water park" on the forest, with relatively easy access for visitors. Therefore, recreation is considered outstandingly remarkable.

- **Geology**

- ◆ Description: The headwaters are underlain by metamorphic slate and metasedimentary ocean deposits, which were uplifted to their present altitude by plate tectonics. This area receives 25 feet of snow in an average winter which creates Freeze Out and other alpine meadows. In contrast, the lower portion of Dry Meadow Creek has numerous long sections of granitic plutonic bedrock and bedrock control sections, with solid granite channels, such as the Alder Slabs.
- ◆ Determination: Geology is an outstandingly remarkable value. Bedrock control sections, with solid granite channels, such as the Alder Slabs, are exemplary of this feature. Therefore, geology is considered outstandingly remarkable.

Summary: Dry Meadow Creek (GIS Number 2.70.1) is eligible because recreation and geology are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Very little, only access trails

Accessibility: Roads and nonmotorized trails

Water Quality: Very good

Classification: Scenic

Dry Meadow Creek (GIS Number 2.70.2)

Location

- County: Tulare
- Beginning Point: Center of Sec.15 T.22S. R.32E
- End Point: Confluence with North Fork Kern River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 2.6
- Eligible: 2.6

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: This segment flows through a dry and open forest environment over granite bedrock. The most noteworthy feature is located just before the creek enters the North Fork Kern river is a series of waterfalls and deep basins scoured out of a granite monolith, known as the 7 Teacups.

- ◆ Determination: Scenery is an outstandingly remarkable value. The exceptionally high contrast between the whitewater and the desert-like landscape, the steep topography and changing relief, and the exemplary granitic features of the 7 Teacups create a dynamic and highly scenic landscape. Therefore, scenery is considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: This creek provides opportunities for Class C canyoneering, rock climbing, and Class V whitewater kayaking through the 7 Teacups falls and basins. It is accessed from Lloyd Meadow Road or National Forest System trail 32E43. This has been a popular destination for visitors since the 1980's and social media has increased the popularity of the area.
 - ◆ Determination: Recreation is an outstandingly remarkable value. The 7 Teacups are unique and along with other waterfalls attract visitors from outside the region of comparison. Therefore, recreation is considered outstandingly remarkable.
- **Geology**
 - ◆ Description: The lower portion of Dry Meadow Creek has numerous long sections of granitic plutonic bedrock and bedrock control sections, with solid granite channels, such as the 7 Teacups.
 - ◆ Determination: Geology is an outstandingly remarkable value. Bedrock control sections, with solid granite channels, such as the 7 Teacups, are exemplary of this feature. Therefore, geology is considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **History**
 - ◆ Description: Includes identified and documented historic sites.
 - ◆ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, the history is not considered outstandingly remarkable.

Summary: Dry Meadow Creek (GIS Number 2.70.2) is eligible because scenery, recreation, geology, and prehistory are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Roads and nonmotorized trails

Water Quality: Good

Classification: Scenic

Durrwood Creek (GIS Number 2.71)

Location

- County: Tulare
- Beginning Point: T.22S. R.33E. Sec.11 northeast of Sherman Peak at 8700'
- End Point: Confluence with North Fork Kern River
- Special Area: None

Mileage

- Studied: 7.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ♦ Description: Durrwood Creek falls from the Kern Plateau to the North Fork Kern River, passing through multiple transition zones from red fir lodgepole forests and meadows high on the Kern Plateau down the steep, west facing slopes of the North Fork Kern River Canyon which transition to dry brushlands. Scenic attributes include sheer cliffs, rock outcrops, waterfalls, and big, panoramic views of the Kern River Canyon and the visual diversity created from multiple transition zones.
 - ♦ Determination: Scenery is not outstandingly remarkable. Although the views are beautiful, visual diversity is not rare or unique. Therefore, scenery is not considered outstandingly remarkable.
- **Fish (Habitat)**
 - ♦ Description: This creek will be stocked with Kern River Rainbow Trout (KRRT).
 - ♦ Determination: Fish Habitat is not an outstandingly remarkable value. This creek is not one of the best examples of KRRT habitat, and therefore, fish habitat is not considered outstandingly remarkable.

Summary: Durrwood Creek is ineligible because it has no outstandingly remarkable values.

East Fork Erskine Creek (GIS Number 2.72)

Location

- County: Kern
- Beginning Point: T.27S. R.34E. Sec.33 at 6200' in the Piute Mountains
- End Point: Confluence with Middle Fork Erskine Creek

- Special Area: None

Mileage

- Studied: 3.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: The creek is located in a steep and an exceptional dry landscape in the Piute Mountains, with views of the Southern Sierra Nevada mountains. The riparian area contrasts with the high desert landscape.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Mountain views are not exemplary. Although the presence of riparian vegetation contrasts with the high desert landscape, similar creeks exist in the Piute Mountains and this creek is not exceptional or unique. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: National Forest System trail 34E34, which is open to motorcycles, follows the creek for about 0.5 miles. This trail is not well maintained. There are no other trails or roads along the creek. However, the terrain upstream from the trail is relatively gentle and offers visitors opportunities to walk cross country to view butterflies and bird watch.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Butterfly viewing and bird watching opportunities are not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.
- **Wildlife (Population)**
 - ◆ Description: This area attracts butterflies and is on a boundary for butterflies from the Tehachapi Mountains and the desert to the east.
 - ◆ Determination: Wildlife Population is not an outstandingly remarkable value. While this is a great area for butterfly watching, other, similar opportunities also exist elsewhere in the area. Therefore, wildlife population is not considered outstandingly remarkable.

Summary: East Fork Erskine Creek is ineligible because it has no outstandingly remarkable values.

Fish Creek (GIS Number 2.78)

Location

- County: Tulare
- Beginning Point: T.20S. R.32E. Sec.19 near Junction Meadow at 7800'

- End Point: Confluence with Little Kern River
- Special Areas: Golden Trout Wilderness, Headwaters in Giant Sequoia National Monument

Mileage

- Studied: 5.8
- Eligible: 5.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Fish Creek flows through mixed conifer forests and meadows.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Other, similar scenic characteristics also exist elsewhere in the area and it is not unique. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: This creek is popular for fishing and is designated by the State of California as a Heritage and Wild Trout Water for fishing opportunities for Little Kern Golden Trout. Little Kern Golden Trout are present is a stable population, so the opportunity to fish for these heritage trout in their native range is outstanding.
 - ◆ Determination: Recreation is an outstandingly remarkable value because the State of California designated the creek as a Heritage and Wild Trout Water.
- **Fish (Population and Habitat)**
 - ◆ Description: Stable populations of Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Fish Creek (GIS Number 2.78) is eligible because recreation, prehistory, and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: High

Classification: Wild

Fish Creek (GIS Number 2.79)

Location

- County: Tulare
- Beginning Point: T.20S. R.34E. Sec.22 east of Blackrock Mountain at 9300'
- End Point: Confluence with South Fork Kern River
- Special Area: Partly within Domeland Wilderness

Mileage

- Studied: 23.4
- Eligible: 23.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: The areas around fish creek are popular for hunting and fishing. The upper reaches are accessible by vehicles and the lower reaches are in the Domeland Wilderness. Remnant populations of golden trout inhabit these waters. Other popular activities include camping, motorcycle trail riding, mountain biking, backcountry travel, and hiking.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. This creek is not identified by the State of California as a Heritage Trout Water. Therefore, recreation is not considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Fish Creek contains habitat for golden trout and is within the historic range for the species. A remnant population exists in the creek. This creek will be included in future golden trout restoration projects when the recovery effort starts.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values. Due to the presence of golden trout and good habitat for this species, fish population and habitat is considered outstandingly remarkable.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Great Gray Owls are found in the area of Fish Creek. This is a Forest Service Sensitive Species and rare on the Sequoia National Forest. Great Gray Owls and Goshawks hunt along the Fish Creek Meadows and nearby forests.

- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Due to the presence of Great Gray Owls and their habitat, wildlife population and habitat are considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Fish Creek (GIS Number 2.79) is eligible because prehistory, fish population and habitat, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: One or two ground water wells that do not appear to alter flows

Shoreline Development: Two road crossings, otherwise little shoreline development as this is a remote area

Accessibility: Roads, including Sherman Pass Road, and nonmotorized trails

Water Quality: Very High

Classification: Recreational

Freeman Creek (GIS Number 2.81)

Location

- County: Tulare
- Beginning Point: T.21S. R.32E. Sec.5 northeast of Quaking Aspen Campground at 7100'
- End Point: Confluence with North Fork Kern River
- Special Areas: Giant Sequoia National Monument, Freeman Creek Botanical Area

Mileage

- Studied: 7.4
- Eligible: 7.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: The Freeman Creek Trail (32E20), is a well-developed and popular trail for mountain bikers, hikers, and equestrians. The trail wanders along Freeman Creek, traveling through the beautiful and pristine Freeman Creek Giant Sequoia Grove and the Freeman Creek Botanical Area. An accessible trail with a parking area has been

developed at the President George H.W. Bush Tree, one of the grandest monarchs named for the presidential proclamation that protected all giant sequoia trees for future generations. Future plans for this site include interpretive development and expanded amenities to accommodate visitors to the accessible trail.

- ♦ Determination: Recreation is an outstandingly remarkable value. The Freeman Creek Trails provides exceptional opportunities for visitors to experience the grandeur of specimen giant sequoias in an environment that is untouched by past logging and human intervention. In the future, when interpretive development and expanded amenities are complete, Freeman Creek will attract visitors from outside the region of comparison. Therefore, recreation is considered to be outstandingly remarkable.
- **Prehistory**
 - ♦ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ♦ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **Botany**
 - ♦ Description: This creek flows through Freeman Creek Giant Sequoia Grove and Freeman Creek Botanical Area.
 - ♦ Determination: Botany is an outstandingly remarkable value. Freeman Creek Giant Sequoia Grove and Freeman Creek Botanical Area are unique and exemplary of the ecology of Giant Sequoia groves. Therefore, botany is considered outstandingly remarkable.

Summary: Freeman Creek is eligible because recreation, prehistory, and botany are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Some crossings have not been bridged

Accessibility: Roads and nonmotorized trails

Water Quality: Good

Classification: Scenic

Galena Creek (GIS Number 2.84)

Location

- County: Tulare
- Beginning Point: T.19S. R.31E. Sec.17 at 8400' west of Maggie Mountain Grove
- End Point: Confluence with North Fork Middle Fork Tule River
- Special Areas: Giant Sequoia National Monument, Golden Trout Wilderness

Mileage

- Studied: 2.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Botany**
 - ◆ Description: Galena Creek drains Maggie Mountain Giant Sequoia Grove.
 - ◆ Determination: Botany is not an outstandingly remarkable value. Galena Creek is similar to many other creeks that provide water within other Giant Sequoia groves and is not unique or exemplary. Therefore, botany is not considered outstandingly remarkable.

Summary: Galena Creek is ineligible because it has no outstandingly remarkable values.

Grasshopper Creek (GIS Number 2.88)

Location

- County: Tulare
- Beginning Point: T.19S. R.32E. Sec.1 at 10,100' south of Coyote Lakes in Golden Trout Wilderness
- End Point: Confluence with North Fork Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 3.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Grasshopper Creek flows from the Western Divide down to the North Fork Kern River, offering views of the Kern Slide, the Sierra Crest, and the Kern Canyon.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although views are beautiful, other, similar views also exist elsewhere in the area and it is not unique or exemplary. Therefore, scenery is not considered to be outstandingly remarkable.

- **Recreation**

- ◆ Grasshopper Creek can be enjoyed by back country travelers and has opportunities for fishing for Kern River rainbow trout. The creek lacks any trail along its length and backcountry travelers must scramble cross country to visit.
- ◆ Determination: Grasshopper Creek offers cross country opportunities for back country travelers which is common to most creeks in the area. The fishing opportunities are limited due to the steep terrain and are not unique or exemplary when compared to North Fork Kern River or other streams in the area. For this reason, the recreation river related value is not determined to be outstandingly remarkable.

- **Geology**

- ◆ Description: Grasshopper Creek drops down to the Kern River and is very similar to other creeks in the area and is not unique or exemplary. For this reason, the geology river related value is not determined to be outstandingly remarkable.
- ◆ Determination: Geology is not an outstandingly remarkable value. Other, similar creeks also exist elsewhere in the area and it is not unique or exemplary. Therefore, geology is not considered outstandingly remarkable.

Summary: Grasshopper Creek is ineligible because it has no outstandingly remarkable values.

Greenhorn Creek (GIS Number 2.89)

Location

- County: Tulare
- Beginning Point: T.26S. R.32E. Sec.30 on the west slope of Woodward Peak near Evans Flat Campground
- End Point: Confluence with Kern River
- Special Area: None

Mileage

- Studied: 8.4
- Eligible: 8.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: Greenhorn Creek Cave is well known to spelunkers locally and regionally.
- ◆ Determination: Recreation is not an outstandingly remarkable value. While interesting to spelunkers, Greenhorn Creek Cave is not a unique or exemplary recreation experience. Therefore, recreation is not considered outstandingly remarkable.

- **Geology**
 - ◆ Description: Greenhorn Creek Cave is well known to spelunkers locally and regionally.
 - ◆ Determination: Geology is not an outstandingly remarkable value. While interesting to spelunkers, Greenhorn Creek Cave is not a unique or exemplary geologic feature. Therefore, geology is not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **History**
 - ◆ Includes identified and documented historic sites.
 - ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are unusual or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Greenhorn Creek is eligible because prehistory and history are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Road and trail crossings

Accessibility: Many roads and nonmotorized trails near this creek

Water Quality: Good

Classification: Recreational

Grizzly Creek (GIS Number 2.90)

Location

- County: Fresno
- Beginning Point: T.12S. R.30E. Sec.29 in Monarch Wilderness near Grizzly Lake
- End Point: Confluence with South Fork Kings River
- Special Area: Monarch Wilderness

Mileage

- Studied: 5.5
- Eligible: 5.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Grizzly Creek tumbles down a steep canyon in the Kings River Gorge, one of the deepest canyons in the world, with views of outstanding geological features. Grizzly Falls is an outstanding waterfall close to the creek's terminus at the South Fork Kings River Wild and Scenic River and it is easily viewed and accessed from the Kings Canyon Scenic Byway and a developed day use site. Thousands of visitors from all over the world enjoy this feature each year.
- ◆ Determination: Scenery is an outstandingly remarkable value. Grizzly Falls is an outstanding waterfall that draws visitors from outside the region of comparison. Therefore, scenery is considered outstandingly remarkable.

- **Geology**

- ◆ Description: Grizzly Creek originates in the Monarch Wilderness near Grizzly Lake tumbles down a steep canyon in the Kings River Gorge, one of the deepest canyons in the world. Grizzly Falls is a scenic waterfall close to the creek's terminus at the South Fork Kings River.
- ◆ Determination: Geology is an outstandingly remarkable value. Grizzly falls is an outstanding waterfall and the elevation drop into the South Fork Kings River is significant. Therefore, geology is considered outstandingly remarkable.

Summary: Grizzly Creek is eligible because scenery and geology are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Very little

Water Quality: Good

Classification: Wild

Hossack Creek (GIS Number 2.94)

Location

- County: Tulare
- Beginning Point: T.20S. R.31E. Sec.21 near Hossack Meadow
- End Point: Confluence with North Fork Middle Fork Tule River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 2.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Botany**
 - ◆ Description: This creek flows through meadows and near Alder Giant Sequoia Grove.
 - ◆ Determination: Botany is not an outstandingly remarkable value. This creek is not unique. Therefore, botany is not considered outstandingly remarkable.

Summary: Hossack Creek is ineligible because it has no outstandingly remarkable values.

Jackass Creek (GIS Number 2.98)

Location

- County: Tulare
- Beginning Point: T.21S. R.35E. Sec.5 northeast of Smith Mountain
- End Point: Confluence with Fish Creek
- Special Area: None

Mileage

- Studied: 5.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Jackass Creek is in the lodgepole-red fir belt meadows, and mountain chaparral alternating with forests. The abundant meadows and aspen give the area picturesque qualities.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although picturesque, other, similar creek environments also exist elsewhere on the Kern Plateau and it is not unique or exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Jackass National Recreation Trail (35E13) is a popular OHV, mountain biking, and hiking trail that draws visitors seeking challenging recreation activities. In

the summer, temperatures are cooler than the valleys and this area provides respite from summer heat.

- ◆ Determination: Recreation is not an outstandingly remarkable value. Although Jackass National Recreation Trail draws many visitors from within the region of comparison, many other, similar trails also exist on the Kern Plateau the creek side trail experience is not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.
- **History**
 - ◆ Description: Includes identified and documented historic sites.
 - ◆ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is not considered outstandingly remarkable.

Summary: Jackass Creek is ineligible because it has no outstandingly remarkable values.

Jacks Creek (GIS Number 2.99)

Location

- County: Kern
- Beginning Point: T.26S. R.36E. Sec.22 at 6000' in Scodie Mountains
- End Point: Confluence with Canebrake Creek, north of Walker Pass
- Special Area: Kiavah Wilderness

Mileage

- Studied: 4.4
- Eligible: 4.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population and Habitat)**
 - ◆ Description: Jacks Creek is an important water source for wildlife in a very dry area and for the willows. It is one of the major tributaries that supplies water to the willows that form the basis for habitat for Southwestern Willow Flycatcher, a federally listed

species. It is within foraging distance of Southwestern Willow Flycatcher critical habitat along Canebrake Creek.

- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of Southwestern Willow Flycatchers and their habitat, wildlife population and habitat are considered outstandingly remarkable.

Summary: Jacks Creek is eligible because wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: None

Water Quality: Good

Classification: Wild

Kern River (GIS Number 2.104.2)

Location

- County: Kern
- Beginning Point: Lake Isabella Dam
- End Point: Borel Powerhouse
- Special Area: None

Mileage

- Studied: 7.4
- Eligible: 7.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: This segment of the Kern River travels a granite bedrock channel through a dry landscape of boulders and scattered oaks and grey pine, starting gently, followed by steeper gradients. The river corridor is buffered by the steep topography, which makes the scenery appear rugged and remote despite its proximity to urban areas and a highway.
 - ◆ Determination: Scenery is an outstandingly remarkable value. The river corridor and large volume of water sharply contrasts with the surrounding dry hillsides. Swiftly changing river conditions produce variable and attractive series of rapids and pools. Therefore, scenery is considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Whitewater boating occurs on this segment when water conditions permit. Four outfitter/guide special use permittees market and provide high quality opportunities to visitors to experience this world class setting. There is one developed campground at the base of the dam and river access sites managed by the Bureau of Land Management.
- ◆ Determination: Recreation is an outstandingly remarkable value. This segment of the Kern River attracts many visitors from outside the region of comparison to experience whitewater rafting and kayaking. Therefore, recreation is considered outstandingly remarkable.

- **Wildlife (Population and Habitat)**

- ◆ Description: Southwestern willow flycatcher, yellow billed cuckoo, and other migratory birds are in the area. California Condors occur in this area and are an endangered species. Two species of slender salamanders occur in this segment, including a species is under review by U.S. Fish and Wildlife Service for federal listing.
- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of Southwestern willow flycatchers and their habitat, as well as California Condors and slender salamanders, wildlife population and habitat are considered outstandingly remarkable.

Summary: Kern River (GIS Number 2.104.2) is eligible because scenery, recreation, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Lake Isabella Dam

Shoreline Development: Campsites and roads

Accessibility: Roads and access points

Water Quality: If Lake Isabella (Reservoir) water level is low, water temperature may be warmer

Classification: Recreational

Kern River (GIS Number 2.104.3)

Location

- County: Kern
- Beginning Point: Borel Powerhouse
- End Point: Democrat Dam
- Special Area: None

Mileage

- Studied: 12.7
- Eligible: 12.7

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: This segment of the Kern River drops approximately 350 feet (approximately 27 feet per mile). The river character is variable as it falls through this exceptionally steep canyon, contrasting sharply with the dry and flat landscape of the Central Valley. The series of rapids in a wide range of classes are intermixed with stretches of quiet river flowing past sycamore and willows, and dry, steep canyon walls with grey pine and oaks.
- ◆ Determination: Scenery is an outstandingly remarkable value. The quality and variety of rapids and visual contrast is exceptional. Therefore, scenery is considered outstandingly remarkable.

- **Recreation**

- ◆ Description: A wide variety of recreation opportunities exist. There are two developed campgrounds Hobo Campground and Sandy Flat, a developed day use site (Miracle Hot Springs) and developed river access sites (Democrat and Delonega). The Borel Powerhouse tailrace normally provides sufficient flows during May through September for the whitewater boating season. Outfitter guides for river rafting trips operate campsites under special use permits. The private and commercial white-water boating opportunities attract visitors from outside of the region of comparison and are exceptional quality.
- ◆ Determination: Recreation is an outstandingly remarkable value. This segment of the Kern River attracts many visitors from outside the region of comparison to experience whitewater rafting and kayaking. Therefore, recreation is considered outstandingly remarkable.

- **Fish (Population and Habitat)**

- ◆ Description: Native Hardhead minnow and other native cool water fishes occur.
- ◆ Determination: Fish Population and Habitat are not outstandingly remarkable values. Hardhead minnows are becoming more rare, but they are found in the Tule River and several other rivers systems in the southern Sierra Nevada Mountains. Therefore, fish population and habitat are not considered outstandingly remarkable.

- **Wildlife (Population and Habitat)**

- ◆ Description: Sensitive mussels have been rediscovered in this segment. California Condors occur in this area and are an endangered species. Two species of slender salamanders occur in this segment, including species under review by U.S. Fish and Wildlife Service for federal listing.
- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of mussels, salamanders, and California Condors and their habitat, wildlife population and habitat are considered outstandingly remarkable.

Summary: Kern River (GIS Number 2.104.3) is eligible because scenery, recreation, wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Hydropower infrastructure

Shoreline Development: Road and access points

Accessibility: Roads and access points

Water Quality: Good, if Lake Isabella (Reservoir) water level is low, water temperature may be warmer

Classification: Scenic

Kern River (GIS Number 2.104.4)

Location

- County: Kern
- Beginning Point: Democrat Dam
- End Point: National Forest boundary
- Special Area: None

Mileage

- Studied: 11.5
- Eligible: 11.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: This is the steepest, most rugged stretch of the lower Kern River Canyon located entirely on National Forest land. Under normal water flow conditions, the river is a series of impressive rapids interspersed with stretches of seemingly quiet waters. California State Highway 178 is located immediately adjacent to all but the upper one-half mile of this river segment and the river is easily viewed from the highway. The white-water river conditions and steep canyon walls contrast sharply with the flat central valley and the dry landscape of southern California.
 - ◆ Determination: Scenery is an outstandingly remarkable value. The quality and variety of rapids and visual contrast is exceptional. Therefore, scenery is considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Highway 178 is located immediately adjacent to all but the upper one-half mile of this river segment. There are innumerable turnouts and three developed day use sites where visitors stop to picnic, fish, and enjoy the water. This segment of river is

located close to the Bakersfield area which draws crowds during the hot, summer season. A few highly experienced whitewater enthusiasts enjoy the challenge of kayaking this segment.

- ◆ Determination: Recreation is not an outstandingly remarkable value. This river segment draws many visitors from local communities in the Central Valley and the challenging white water draws a few expert kayakers from outside the region of comparison. Visitors are not encouraged to enter the dangerous waters. The fishing opportunity is for non-native species. Therefore, recreation is not considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Native Hardhead minnow and other native cool water fishes occur.
 - ◆ Determination: Fish Population and Habitat are not outstandingly remarkable values. Hardhead minnows are becoming more rare, but they are found in the Tule River and several other rivers systems in the southern Sierra Nevada Mountains. Therefore, fish population and habitat are not considered outstandingly remarkable.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Sensitive mussels have been rediscovered in this segment. California Condors occur in this area and are an endangered species. Two species of slender salamanders occur in this segment, including species under review by U.S. Fish and Wildlife Service for federal listing.
 - ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of mussels, salamanders, and California Condors and their habitat, wildlife population and habitat are considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **History**
 - ◆ Includes identified and documented historic sites.
 - ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are unusual or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Kern River (GIS Number 2.104.4) is eligible because scenery, prehistory, history, and wildlife population and habitat, are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Roads and access points

Accessibility: Road and access points with parking for day use

Water Quality: Good

Classification: Recreational

Kings River (GIS Number 2.106.1)

Location

- County: Fresno
- Beginning Point: Elevation 1595
- End Point: Granite Dike
- Special Area: Kings River Special Management Area, Giant Sequoia National Monument

Mileage

- Studied: 3.9
- Eligible: 3.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: This segment of the Kings River flows through the incredible steep-sided Kings River gorge with a wide variety of geomorphology that provides outstanding visual diversity.
 - ◆ Determination: Scenery is an outstandingly remarkable value. The excellent water quality, undisturbed shorelines, distant views of hills, cliffs, and high mountains make the scenic character of the segment unique within the region of comparison. Therefore, scenery is considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: This segment parallels the Kings River National Recreation Trail. Mill Flat campground is the only developed facility. Fishing, hiking, and whitewater boating are popular activities in this remote setting.
 - ◆ Determination: Recreation is an outstandingly remarkable value. This is one of the most challenging whitewater kayaking and rafting runs in America for expert paddlers. This segment attracts expert paddlers from outside the region of comparison. Therefore, recreation is considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Native Hardhead minnow and other native cool water fishes occur.
 - ◆ Determination: Fish Population and Habitat are not outstandingly remarkable values. Hardhead minnows are becoming more rare, but they are found in the Tule River and

several other rivers systems in the southern Sierra Nevada Mountains. Therefore, fish population and habitat are not considered outstandingly remarkable.

- **Wildlife (Population and Habitat)**

- ♦ Description: Sensitive salamanders and their habitat occur on the banks of this segment. These salamanders are rare and endemic to this river.
- ♦ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Due to the presence of rare and endemic salamanders, wildlife population and habitat are considered outstandingly remarkable.

- **Prehistory**

- ♦ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ♦ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

- **History**

- ♦ Includes identified and documented historic sites.
- ♦ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are unusual or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Kings River (GIS Number 2.106.1) is eligible because scenery, recreation, prehistory, history, and wildlife population and habitat, are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Nonmotorized trail

Accessibility: Nonmotorized trail

Water Quality: Excellent

Classification: Wild

Kings River (GIS Number 2.106.2)

Location

- County: Fresno
- Beginning Point: Granite Dike
- End Point: Kings River Special Management Area boundary
- Special Area: Kings River Special Management Area, Giant Sequoia National Monument

Mileage

- Studied: 7.5
- Eligible: 7.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: The dry, steep-sided canyon contrasts sharply with the flat river corridor and the excellent water quality of the river. The wide variety of geologic morphology and the distant views of high mountains provide visual diversity.
 - ◆ Determination: Scenery is an outstandingly remarkable value. The visual diversity is outstanding and the contrast of the river corridor with the steep canyon walls is exceptionally high. Therefore, scenery is considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: This segment provides an outstanding whitewater boating setting. Outfitter guides provide float trips that attract visitors from well outside the region of comparison. At medium and high flows, the Kings River is one of few whitewater rivers between the Colorado River in Arizona and the Klamath River in northern California that is suitable for river-running dories. Attractive wild trout waters for anglers. The relatively undisturbed shoreline is accessible by a dirt road appropriate for high clearance vehicles.
 - ◆ Determination: Recreation is an outstandingly remarkable value. This segment of the Kings River provides the most whitewater rafting opportunities and has the longest boating season among all non-dammed rivers in the Sierra Nevada region. The whitewater boating setting is outstanding and the river is uniquely suited to running dories. Therefore, recreation is considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Best preserved/exposed remnants of pre-batholithic rock on Sierra Nevada West Slope, glacial carved, 13,291' vertical drop in elevation.
 - ◆ Determination: Geology is an outstandingly remarkable value. The geology is unique compared to most other rivers systems in the southern Sierra Nevada Mountains. Therefore, geology is considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Native Hardhead minnow and other native cool water fishes occur. Wild trout waters have non-native trout
 - ◆ Determination: Fish Population and Habitat are not outstandingly remarkable values. Hardhead minnows are becoming more rare, but they are found in the Tule River and several other rivers systems in the southern Sierra Nevada Mountains. Therefore, fish population and habitat are not considered outstandingly remarkable.

- **Wildlife (Population and Habitat)**

- ◆ Description: Multiple species and their habitat occur: Winter range for two major deer herds, many bird species, (including Golden Eagle, Peregrine Falcon, Prairie Falcon, Willow flycatcher), Mountain Lion, Gray Fox, and Ringtail Cat.
- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of multiple wildlife species and their habitat, wildlife population and habitat are considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

- **History**

- ◆ Includes identified and documented historic sites.
- ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are unusual or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Kings River (GIS Number 2.106.2) is eligible because scenery, recreation, prehistory, history, and wildlife population and habitat, are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Road and access points

Accessibility: Road and nonmotorized trail

Water Quality: Excellent

Classification: Scenic

Kings River (GIS Number 2.106.3)

Location

- County: Fresno
- Beginning Point: Kings River Special Management Area boundary
- End Point: High water line of Pine Flat Reservoir
- Special Area: None

Mileage

- Studied: 1.3
- Eligible: 1.3

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: The dry, steep-sided canyon contrasts sharply with the flat river corridor and the excellent water quality of the river. The distant views of high mountains provide visual diversity.
- ◆ Determination: Scenery is an outstandingly remarkable value. The contrast of the river corridor with the steep canyon walls is exceptionally high. Therefore, scenery is considered outstandingly remarkable.

- **Recreation**

- ◆ Description: This segment provides an outstanding whitewater boating setting. Outfitter guides provide float trips that attract visitors from well outside the region of comparison. At medium and high flows, the Kings River is one of few whitewater rivers between the Colorado River in Arizona and the Klamath River in northern California that is suitable for river-running dories. The Wild trout waters and angling attract many fly fishers. The relatively undisturbed shoreline is accessible by a paved road.
- ◆ Determination: Recreation is an outstandingly remarkable value. This segment of the Kings River provides the most whitewater rafting opportunities and has the longest boating season among all non-dammed rivers in the Sierra Nevada region. The fishing and whitewater boating setting is outstanding and the river is uniquely suited to running dories. Therefore, recreation is considered outstandingly remarkable.

- **Fish (Population and Habitat)**

- ◆ Description: Native Hardhead minnow and other native cool water fishes occur. The trout are not native and are not unique.
- ◆ Determination: Fish Population and Habitat are not outstandingly remarkable values. Hardhead minnows are becoming more rare, but they are found in the Tule River and several other rivers systems in the southern Sierra Nevada Mountains. The non-native trout are not unique. Therefore, fish population and habitat are not considered outstandingly remarkable.

- **Wildlife (Population and Habitat)**

- ◆ Description: Multiple species and their habitat occur: Winter range for two major deer herds, many bird species, (including Golden Eagle, Peregrine Falcon, Prairie Falcon, Willow flycatcher), Mountain Lion, Gray Fox, and Ringtail Cat.
- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of multiple wildlife species and their habitat, wildlife population and habitat are considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

- **History**

- ◆ Includes identified and documented historic sites.
- ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are unusual or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Kings River (GIS Number 2.106.3) is eligible because scenery, prehistory, history, and wildlife population and habitat, are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Road and access points

Accessibility: Road and nonmotorized trail

Water Quality: Excellent

Classification: Recreational

Landers Creek (2.108)

Location

- County: Kern
- Beginning Point: T.29S. R.34E. Sec.11 northwest of Sorrell Peak in the Piute Mountains at 7200'
- End Point: Confluence with Kelso Creek
- Special Area: None

Mileage

- Studied: 3.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: The Pacific Crest Trail follows a portion of Landers Creek and provides a drinking water source for long-distance trail users.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Although the area has multiple trail opportunities and provide drinking water for trail users, other, similar recreation opportunities also exist elsewhere in the area and are not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.

- **History**

- ◆ Description: The area was used for cattle and is similar to other areas of the forest that had cattle and sheep driven through and cattle camps.
- ◆ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is not considered outstandingly remarkable.

Summary: Landers Creek is ineligible because it has no outstandingly remarkable values.

Leggett Creek (GIS Number 2.111)

Location

- County: Tulare
- Beginning Point: T.19S. R.33E. Sec.18 north of Angora Mountain in Golden Trout Wilderness at 9300'
- End Point: Confluence with North Fork Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 2.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Leggett Creek tumbles down from 9000 feet to the Kern River at 6,000 ft. Glaciation in the upper valleys of the Kern River and some views of an 1880s landslide provide geologic interest.
- ◆ Determination: Geology is not an outstandingly remarkable value. While the 1880s landslide is interesting, other, similar views also exist elsewhere in the area and it is not unique or exemplary. Therefore, geology is not considered outstandingly remarkable.

Summary: Leggett Creek is ineligible because it has no outstandingly remarkable values.

Lion Creek (GIS Number 2.114)

Location

- County: Tulare
- Beginning Point: T.19S. R.32E. Sec.13 northwest of Angora Mountain in Golden Trout Wilderness at 9200
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 3.5
- Eligible: 3.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Lion Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Excellent

Classification: Wild

Little Kern Lake Creek (GIS Number 2.117)

Location

- County: Tulare
- Beginning Point: Coyote Lakes in the Golden Trout Wilderness
- End Point: Confluence with North Fork Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 3.1
- Eligible: 3.1

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: The headwaters of Little Kern Lake Creek start at nearly 11,000 feet at Coyote Peaks in glacial cirques, alpine lakes, and meadows on the east side of Coyote ridge. It tumbles down 4,800 feet to its confluence with the North Fork Kern River. This confluence is also the southern extent of Tahoe age glaciation in the Kern Canyon. This filled the Kern canyon with 1,000 feet of ice and carved the characteristic U shape of this portion of the Kern Canyon. At the confluence of Little Kern Lake Creek and the Kern River is the highly unusual Little Kern Lake. It was formed, not by glaciation, but by a massive landslide from the opposite side of the canyon in the 1800's that blocked the entire Kern River, for a time.
 - ♦ Determination: Geology is an outstandingly remarkable value.
- **Prehistory**
 - ♦ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ♦ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Little Kern Lake Creek is eligible because geology and prehistory are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Little Kern River (GIS Number 2.118)

Location

- County: Tulare
- Beginning Point: Headwaters south of Farewell Gap

- End Point: Confluence with Table Meadow Creek
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 12.4
- Eligible: 12.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: The headwaters of the Little Kern River features a view of Farewell Gap and the surrounding peaks, shaped by the southernmost extent of glaciers during the last glacial period, combined with the diverse vegetation types from alpine fell-fields at higher elevations to meadows and conifer forest at the lower reaches.
 - ◆ Determination: Scenery is an outstandingly remarkable value. This is one of the few areas with impressive views formed by glaciation in the Sequoia National Forest. Therefore, scenery is considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: This creek is designated by the State of California as a Heritage and Wild Trout Water for fishing opportunities for Little Kern Golden Trout.
 - ◆ Determination: Recreation is an outstandingly remarkable value. The State of California designated the creek as a Heritage and Wild Trout Water. There are exceptional opportunities for solitude. Therefore, recreation is considered outstandingly remarkable.
- **Geology**
 - ◆ Description: From the headwaters of the Little Kern River to Rifle Creek is the southernmost extent of glaciers during the last glacial period.
 - ◆ Determination: Geology is an outstandingly remarkable value. The documented southern extent of glaciation and lateral moraines located in the vicinity of Shotgun Creek provide a unique geologic land feature. Therefore, geology is not considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Mountain yellow-legged frogs and their Critical Habitat exist. Sierra Nevada bighorn sheep Critical habitat exists.

- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of Mountain yellow-legged frogs and their habitat, as well as Sierra Nevada bighorn sheep habitat, wildlife population and habitat are considered outstandingly remarkable.

Summary: Little Kern River (GIS Number 2.118) is eligible because scenery, recreation, geology, fish population and habitat, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Excellent

Classification: Wild

Little Kern River (GIS Number 2.119)

Location

- County: Tulare
- Beginning Point: Confluence with Table Meadow Creek
- End Point: Confluence with North Fork Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 12.0
- Eligible: 12.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: This creek is designated by the State of California as a Heritage and Wild Trout Water for fishing opportunities for Little Kern Golden Trout.
 - ◆ Determination: Recreation is an outstandingly remarkable value. The State of California designated the creek as a Heritage and Wild Trout Water. There are exceptional opportunities for solitude. Therefore, recreation is considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.

- ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Western pearlshell mussel, a species-at-risk, is present.
 - ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Based on the presence of Western pearlshell mussel, wildlife population and habitat are considered outstandingly remarkable.

Summary: Little Kern River (GIS Number 2.119) is eligible because recreation, fish population and habitat, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Little Poso Creek (GIS Number 2.120)

Location

- County: Kern
- Beginning Point: T.26S. R.31E. Sec.13 in the Greenhorn Mountains at 6000'
- End Point: Forest Boundary at Poso
- Special Area: None

Mileage

- Studied: 5.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: This creek is in the Greenhorn Mountains and there are many trails and roads.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Activities associated with trails and roads are not river-related. The recreation setting and opportunities are not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

Summary: Little Poso Creek is ineligible because it has no outstandingly remarkable values.

Little Trout Creek (GIS Number 2.121)

Location

- County: Tulare
- Beginning Point: T.23S. R.34E. Sec.16 near Sirretta Pass at 9000'
- End Point: Confluence with Trout Creek
- Special Area: Headwaters within Twisselmann Botanical Area

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Little Trout Creek is in the lodgepole-red fir belt and drains north from Sirretta Pass through a steep canyon and in to Trout Creek, high on the Kern Plateau.
- ◆ Determination: Scenery is not an outstandingly remarkable value. The creek is beautiful but typical of creeks in this area and is not unique or exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Little Trout Creek has recreation opportunities for backcountry travel in a semi-primitive area and fishing for remnant populations of golden trout.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Recreation opportunities are not unique or exemplary, therefore recreation is not considered outstandingly remarkable.

Summary: Little Trout Creek is ineligible because it has no outstandingly remarkable values.

Lost Creek (GIS Number 2.125)

Location

- County: Tulare
- Beginning Point: Aqua Benita Spring in the South Sierra Wilderness
- End Point: Confluence with South Fork Kern River
- Special Area: South Sierra Wilderness

Mileage

- Studied: 9.4
- Eligible: 9.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: Lost Creek flows through the South Sierra Wilderness to the South Fork Kern River Wild and Scenic River, offering visitors backcountry travel opportunities. Lost Creek is designated by the State of California as a South Fork Kern River Wild Trout river. The backcountry travel opportunities are not unlike other opportunities available in wildernesses of the Southern Sierra Nevada and are not exemplary. However Lost Creek is designated by the State of California as a South Fork Kern River Wild Trout river.
 - ◆ Determination: Recreation is an outstandingly remarkable value. Although other, similar backcountry travel opportunities also exist in wilderness areas in the Southern Sierra and these are not exemplary, Lost Creek is designated as a South Fork Kern River Wild Trout river. Therefore, recreation is considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Springs and meadows are highly valued as water supplies to creeks in this dry area. Golden trout, a Forest Service sensitive species, are present in this creek and it is designated as a South Fork Kern River Wild Trout river.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values. Lost Creek is designated as a South Fork Kern River Wild Trout river. Therefore, fish population and habitat are considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Lost Creek is eligible because recreation, prehistory, and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Good

Classification: Wild

Lucas Creek (GIS Number 2.126)

Location

- County: Tulare
- Beginning Point: T.28S. R.31E. Sec.25 in the Breckenridge area at 6500'
- End Point: Confluence with the lower Kern River
- Special Area: None

Mileage

- Studied: 7.6
- Eligible: 7.6

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population and Habitat)**
 - ◆ Description: Mountain yellow-legged frog Suitable Habitat is present on this creek. California condors use this area for foraging. Kern Canyon Slender Salamanders and habitat are present. This species is under review by U.S. Fish and Wildlife Service for federal listing.
 - ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Due to the presence of rare and endemic species, wildlife population and habitat are considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

- **History**

- ◆ Description: Includes identified and documented historic sites.
- ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Lucas Creek is eligible because prehistory, history, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Some in the headwaters, but creek is still flowing in this area

Shoreline Development: Some in the headwaters but riparian areas are mostly intact

Accessibility: Roads

Water Quality: Good

Classification: Scenic

Machine Creek (GIS Number 2.128)

Location

- County: Tulare
- Beginning Point: T.22S. R.34E. Sec.32 east of Round Meadow at 9100'
- End Point: Confluence with Little Trout Creek
- Special Area: None

Mileage

- Studied: 3.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Machine Creek is a beautiful, high elevation creek that flows through meadows and alpine forests with views of the Sierra Crest.
- ◆ Determination: Scenery is not an outstandingly remarkable value. Although the views are beautiful, other, similar scenery also exists in the area and it is not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: National Forest System trail 33E28 follows the creek, providing access for fishermen and back country travelers.

- ◆ Determination: Recreation is not an outstandingly remarkable value. Although visitors enjoy recreation opportunities along Machine Creek, other, similar recreation opportunities also exist elsewhere on the Kern Plateau and these are not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.

Summary: Machine Creek is ineligible because it has no outstandingly remarkable values.

Mahogany Creek (GIS Number 2.129)

Location

- County: Tulare
- Beginning Point: T.22S. R.34E. Sec.1 north of Bald Mountain at 8400'
- End Point: Confluence with Fish Creek
- Special Area: None

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Mahogany Creek is a beautiful, high elevation creek that flows through meadows and alpine forests on the Kern Plateau.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although the views are beautiful, other, similar scenery also exists elsewhere in the area and it is not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Mahogany Creek is located close to roads and National Forest System trail 34E25 travels along the upper portion of the creek. This area is popular for OHV use, hunting, and fishing.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Although visitors enjoy recreation opportunities along Mahogany Creek, other, similar recreation opportunities exist elsewhere in the area and these are not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and

are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

Summary: Mahogany Creek is ineligible because it has no outstandingly remarkable values.

Meadow Creek (GIS Number 2.134)

Location

- County: Tulare
- Beginning Point: T.20S. R.30E. Sec.1 east of Mountain Home at 6100'
- End Point: Confluence with North Fork Middle Fork Tule River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 1.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: The headwaters are just below the Mountain Home State Forest and the creek flows down a steep canyon where it enters the North Fork Middle Fork Tule River. Hiking and camping were identified as river-related recreation for this creek, however there are no National Forest System trails associated with this creek. Wishon Campground is located on the North Fork Middle Fork Tule River just upstream from the confluence with this creek.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Hiking and camping opportunities are not located on this creek. Therefore, recreation is not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.
- **History**
 - ◆ Description: Includes identified and documented historic sites.
 - ◆ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are

not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is not considered outstandingly remarkable.

Summary: Meadow Creek is ineligible because it has no outstandingly remarkable values.

Middle Fork Erskine Creek (GIS Number 2.137)

Location

- County: Kern
- Beginning Point: Piute Mountains near Inspiration Point at 6800'
- End Point: Confluence with East Fork Erskine Creek
- Special Area: None

Mileage

- Studied: 2.4
- Eligible: 2.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Middle Fork Erskine Creek begins below the base of Inspiration Point, a granite marble outcrop. The creek flows through the dry landscape of the Piute Mountains. The riparian vegetation contrasts with the high desert vegetation that covers the slopes of the river canyon.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although the presence of riparian vegetation contrasts with the vegetation on the slopes, similar creeks exist in the Piute Mountains and this creek is not unique or exemplary. The marble outcrop on Inspiration Point is scenic, however it is not river-related and other outstanding views of Inspiration Point exist elsewhere. Therefore, scenery is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Middle Fork Erskine Creek begins below the base of Inspiration Point, a granite marble outcrop. It flows through a tilted roof pendent with schists, marble, and hornfels.
 - ◆ Determination: Geology is an outstandingly remarkable value. This creek flows through a unique geologic feature. Therefore, geology is considered outstandingly remarkable.
- **Wildlife (Population and Habitat)**
 - ◆ Description: This area has many species of butterfly and migratory birds. Slender salamanders and endemic land snails are found in this area and are dependent on the rock outcrops and water associated with this creek. The creek and its tributaries in

combination with the lower Erskine Creek, are corridors for movements of all wildlife in the area because water is rare in the Piute Mountains, a very dry area.

- ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Only two perennial creeks occur in the Piute Mountains and they are important for wildlife as corridors. Dwindling water supplies in the area and the perennial nature of South Fork Erskine Creek make it unique. Therefore, wildlife population and habitat are considered outstandingly remarkable.
- **Botany**
 - ◆ Description: The creek and its tributaries are integral to the Inspiration Point Botanical Area, which is unique ecosystem.
 - ◆ Determination: Botany is an outstandingly remarkable value. Inspiration Point Botanical Area is a unique ecosystem. The integral contribution of Middle Fork Erskine Creek and its tributaries to the Botanical Area make it exemplary. Therefore, botany is considered outstandingly remarkable.

Summary: Middle Fork Erskine Creek is eligible because botany, geology, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Motorized trail

Water Quality: Good

Classification: Scenic

Middle Fork Tule River (GIS Number 2.138)

Location

- County: Tulare
- Beginning Point: Confluence with South Fork Middle Fork Tule and North Fork Middle Fork
- End Point: Forest boundary near Deep Canyon River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 4.8
- Eligible: 4.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: There are two concessionaire-run developed day use sites and one river access point. California State Highway 190 and National Forest System trail 30E29 travel along the creek. Waterplay, fishing for non-native species, and picnicking are popular activities, especially in the summer. During high water flows in the spring, some whitewater kayakers paddle this creek.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Fishing, waterplay, and picnicking are popular activities along many rivers and creeks within the Sequoia National Forest and these recreation opportunities are not unique or exemplary. Only a small number of whitewater kayakers are capable of safely navigating this creek and use is very low. Therefore, recreation is not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

- **History**

- ◆ Description: Includes identified and documented historic sites.
- ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Middle Fork Tule River is eligible because prehistory and history are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Two picnic areas

Accessibility: Very little access in the canyon

Water Quality: Good

Classification: Recreational

Mill Flat Creek (GIS Number 2.143)

Location

- County: Fresno
- Beginning Point: Starts on private property and Sequoia Lake a manmade lake, then moves out of private land near Millwood in T 13S R 27E
- End Point: Confluence with Kings River

- Special Areas: Giant Sequoia National Monument, Kings River Special Management Area

Mileage

- Studied: 14.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: Mill Flat Creek provides opportunities for water play and fishing for non-native species. In the lower portion of the creek, some experienced kayakers enjoy the challenge of whitewater conditions produced from the steep, remote terrain during spring runoff. Access is limited to high clearance vehicles or OHV motorcycles. The upper portion of the creek in the higher elevations is a popular OHV area with a staging area. There is no access to the middle portion of the creek.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. There is limited access to a major portion of the creek. Recreation opportunities are not unique or exemplary, and the majority of the use in the area is OHV use that is not river related. Therefore, recreation is not considered outstandingly remarkable.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Western Pond Turtle have a Critical Aquatic Refuge on Mill Flat Creek. The species is a Forest Service sensitive species but has not qualified for a Species of Conservation Concern.
 - ◆ Determination: Wildlife Population and Habitat is not an outstandingly remarkable value.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.
- **History**
 - ◆ Description: Historic Logging at Millwood and other areas around Hume Lake make this area interesting and important.
 - ◆ Determination: History is not an outstandingly remarkable value. Identified and documented historic sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is not considered outstandingly remarkable.

Summary: Mill Flat Creek is ineligible because it has no outstandingly remarkable values.

Mountaineer Creek (GIS Number 2.146)

Location

- County: Tulare
- Beginning Point: Mowery Meadow in Golden Trout Wilderness
- End Point: Confluence with Alpine Creek
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 5.5
- Eligible: 5.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Mountaineer Creek is eligible because prehistory and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Nobe Young Creek (GIS Number 2.153)

Location

- County: Tulare
- Beginning Point: Windy Gap area of Giant Sequoia National Monument
- End Point: Confluence with Dry Meadow Creek
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 8.1
- Eligible: 8.1

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Nobe Young Creek is one of the areas slated for reintroduction of native Kern River Rainbow Trout in 2019-2020. The habitat is good for native trout. The large effort by the State of California, the Kern River Fisheries Enhancement Fund, the Sequoia National Forest, and other stakeholders will contribute to the resilience of the species within its native range and aid in the recovery.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **History**
 - ◆ Description: Includes identified and documented historic sites.
 - ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Nobe Young Creek is eligible because prehistory, history, and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: A small dam forms Lake Ida, at Camp Whitsett, toward the lower end of the creek. This is a flow through ponded area on the creek.

Shoreline Development: A small dam forms Lake Ida, at Camp Whitsett, toward the lower end of the creek. This is a flow through ponded area on the creek.

Accessibility: Roads and trails

Water Quality: Good

Classification: Recreational

North Alder Creek (GIS Number 2.154)

Location

- County: Tulare
- Beginning Point: T.20S. R.31E. Sec.3 west of Golden Trout Wilderness in Giant Sequoia National Monument at 7000'
- End Point: Confluence with South Alder Creek
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 2.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population and Habitat)**
 - ◆ Description: Historically, Mountain yellow-legged frogs and Foothill yellow-legged frogs occurred within this area.
 - ◆ Determination: Wildlife Population and Habitat are not outstandingly remarkable values. Neither species has been detected in this area recently. Therefore, wildlife population and habitat are not considered outstandingly remarkable values.

Summary: North Alder Creek is ineligible because it has no outstandingly remarkable values.

North Fork Clicks Creek (GIS Number 2.155)

Location

- County: Tulare
- Beginning Point: T.20S. R.31E. Sec.12 in GSNM at 8000'
- End Point: Confluence with Clicks Creek in Golden Trout Wilderness
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 2.5
- Eligible: 2.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: North Fork Clicks Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: A Forest Service road comes within 700 feet in the headwaters of the creek. The rest of the creek is within wilderness and has no trail access.

Water Quality: Good

Classification: Wild

North Fork Middle Fork Tule River (GIS Number 2.159.1)

Location

- County: Tulare
- Beginning Point: National Forest boundary with Sequoia National Park
- End Point: Golden Trout Wilderness Boundary near boundary with Mountain Home State Forest
- Special Area: Golden Trout Wilderness, Giant Sequoia National Monument

Mileage

- Studied: 2.7
- Eligible: 2.7

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Ecology**
 - ◆ Description: Flows through Moses Mountain Giant Sequoia Grove and Research Natural Area. Montane meadows are part of this headwater river.

- ◆ Determination: Botany is an outstandingly remarkable value. This river segment is an integral part of the Moses Mountain Research Natural Area and Grove. Therefore, ecology is considered outstandingly remarkable.

Summary: North Fork Middle Fork Tule River (GIS Number 2.159.1) is eligible because botany is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Very good

Classification: Wild

North Fork Middle Fork Tule River (GIS Number 2.159.2)

Location

- County: Tulare
- Beginning Point: Golden Trout Wilderness Boundary near Mountain Home State Forest
- End Point: Confluence with the North Fork Tule River
- Special Area: Giant Sequoia National Monument, Mountain Home State Forest

Mileage

- Studied: 10.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: The hiking trail (34E14) to the marble reach of the river is popular and frequented by visitors during summer weekends and holidays. Hiking, water play, and camping occur in the area.
 - ◆ Determination: Recreation is not outstandingly remarkable value. Hiking, water play, and camping opportunities are not unique. Therefore, recreation is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Doyle Springs has travertine flow stone and a spring that flows out of this travertine into the river.

- ◆ Determination: Geology is not an outstandingly remarkable value. While Doyle Springs is interesting it is not unique. Therefore, geology is not considered outstandingly remarkable.
- **Botany**
 - ◆ Description: Vegetation in this section of river is not unique.
 - ◆ Determination: Botany is not an outstandingly remarkable value.

Summary: North Fork Middle Fork Tule River (GIS Number 2.159.2) is ineligible because it has no outstandingly remarkable values.

North Fork Tule River (GIS Number 2.160)

Location

- County: Tulare
- Beginning Point: National Forest boundary with Sequoia National Park
- End Point: National Forest boundary near Tulare County Road 276 and National Forest System Road 19S09
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 3.9
- Eligible: 3.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: The California Department of Fish and Wildlife regulates the North Fork Tule River as fly fishing only by designation of its Commission. This is the only fly fishing-only recreation opportunity in the southern Sierra Nevada Mountains. The designation is in effect from the North Fork confluence with Pine Creek east to its headwaters. Jack Flat is a dispersed occupancy spot located adjacent to National Forest System Road 19S09 just west of Jenny Creek. It is frequented by visitors during summer weekends and holidays. Hunting, hiking and horse riding also occur in the area.
 - ◆ Determination: Recreation is an outstandingly remarkable value. This river provides a unique fly-fishing opportunity. Therefore, recreation is considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.

- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **History**
 - ◆ Includes identified and documented historic sites.
 - ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are unusual or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: North Fork Tule River is eligible because recreation, prehistory, and history are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Very good

Classification: Wild

Peppermint Creek (GIS Number 2.169)

Location

- County: Tulare
- Beginning Point: T.21S. R.32E. Sec.19 northeast of Slate Mountain at 8300'
- End Point: Confluence with North Fork Kern River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 8.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Headwaters originate at 9300 ft. in Slate Mountain Botanical Area and Wishon-Tule Roof pendant. In lower elevations, it flows through granitic bedrock into the North Fork Kern River.
 - ◆ Determination: Geology is not an outstandingly remarkable value. While this is a beautiful area, it is not unique or exemplary and therefore geology is not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

Summary: Peppermint Creek is ineligible because it has no outstandingly remarkable values.

Pistol Creek (GIS Number 2.173)

Location

- County: Tulare
- Beginning Point: T.18S. R.32E. Sec.9 in Golden Trout Wilderness at 10,600'
- End Point: Confluence with Shotgun Creek
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 2.0
- Eligible: 2.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Pistol Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Rattlesnake Creek (GIS Number 2.181)

Location

- County: Tulare
- Beginning Point: T.22S. R.34. Sec.12 northeast of Bald Mountain at 8600'
- End Point: Confluence with North Fork Kern River
- Special Area: Small portion within Golden Trout Wilderness

Mileage

- Studied: 14.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Habitat)**
 - ♦ Description: Rattlesnake Creek was home to Kern River Rainbow Trout (KRRT). Eventually this segment will be restocked with native KRRT as the upper North Fork Kern River begins to retain native fish. This is not one of the priorities for the next 10 years.
 - ♦ Determination: Fish Habitat is not an outstandingly remarkable value. This segment is not a priority for reintroduction of KRRT, therefore fish habitat is not considered outstandingly remarkable.

Summary: Rattlesnake Creek (GIS 2.181) is ineligible because it has no outstandingly remarkable values.

Rattlesnake Creek (GIS Number 2.182)

Location

- County: Fresno
- Beginning Point: Spring at 6000 ft. in the Monarch Grove in the Monarch Wilderness
- End Point: Confluence with Boulder Creek
- Special Areas: Giant Sequoia National Monument, Monarch Wilderness

Mileage

- Studied: 0.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ♦ Description: Views of the Kings River Gorge.
- ♦ Determination: Scenery is not an outstandingly remarkable value. Spectacular views of the Kings River Gorge exist from many creeks and trails in the area, including Kanawyer Trail and Windy Cliffs. Views are not unique or exemplary and therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ♦ Description: Hiking and backcountry travel opportunities.
- ♦ Determination: Recreation is not an outstandingly remarkable value. Hiking and backcountry travel opportunities are not unique or exemplary and therefore, recreation is not considered outstandingly remarkable.

- **Botany**

- ♦ Description: The Monarch Giant Sequoia Grove is within the Monarch Wilderness and near the Deer Meadow Giant Sequoia Grove. This area is rich with springs and wet ephemeral draws.
- ♦ Determination: Botany is not an outstandingly remarkable value. While this segment comes from the Monarch Giant Sequoia Grove, it is not unique or exemplary of the ecology of Giant Sequoia groves. Therefore, botany is not considered outstandingly remarkable.

Summary: Rattlesnake Creek (GIS Number 2.182) is ineligible because it has no outstandingly remarkable values.

Rifle Creek (GIS Number 2.186)

Location

- County: Tulare
- Beginning Point: West of Coyote Pass in the Golden Trout Wilderness at 10,100'
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 2.9
- Eligible: 2.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ♦ Description: The creek has an upper band of glaciated granite, and a lower band of Mineral King metamorphic roof pendant along its length.

- ◆ Determination: Geology is not an outstandingly remarkable value. While the geology is interesting, it is not exemplary or unique. Therefore, geology is not considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Rifle Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Russian Charley Creek (GIS Number 2.189)

Location

- County: Fresno
- Beginning Point: T.12S. R.35E. Sec.32 at the Forest boundary at 1700'
- End Point: Pine Flat Reservoir
- Special Area: None

Mileage

- Studied: 1.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Views of the foothills and oak savannas around Pine Flat Reservoir.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Views are not exceptional and similar views exist from many vantage points around Pine Flat Reservoir. Therefore, scenery is not considered outstandingly remarkable.

Summary: Russian Charley Creek is ineligible because it has no outstandingly remarkable values.

Salmon Creek (GIS Number 2.190)

Location

- County: Tulare
- Beginning Point: East of Cannell Peak at 8300'
- End Point: Confluence with North Fork Kern River
- Special Area: None

Mileage

- Studied: 10.9
- Eligible: 10.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ♦ Description: This segment begins on the east side of Cannell Peak and flows into the expansive Big Meadow on the Kern Plateau in the lodgepole red fir belt. Big Meadow is one of the largest wet meadows in the southern Sierra Nevada surrounded by granite ridges, high steep rock outcrops and lush forests. The creek leaves Big Meadow and flows through diverse, sub-alpine forests interspersed with lovely meadows, some highlighted with aspen with lively fall color. The creek changes dramatically as it falls from the plateau through a steep bedrock gorge with jagged rock outcrops and peaks framing a series of cascades and pools. The creek flows through a beautiful series of short falls and polished bedrock basins resembling "teacups" and eventually falls over 450-foot high Salmon Creek Falls, the highest water fall in the southern Sierra Nevada, south of Sequoia National Park. Salmon Creek exhibits exceptional visual diversity as it travels through multiple transition zones from sub-alpine forests and meadows through steep canyons making its way to the North Fork Kern River Wild and Scenic River.
 - ♦ Determination: Scenery is an outstandingly remarkable value. The series of granite basins and falls as well as the 450-foot Salmon Creek Falls are exemplary visual features and attractions. Therefore, scenery is considered outstandingly remarkable.
- **Recreation**
 - ♦ Description: This segment offers a diverse range of recreation opportunities including a variety of Recreation Opportunity Spectrum classes and available activities such as hiking, mountain biking, fishing, rock scrambling, and swimming. Roads provide passenger vehicle access to Big Meadow on the Kern Plateau, which includes a developed recreation facility, Horse Meadow Campground, dispersed camping, and the Rincon trailhead at the North Fork Kern River. Trails parallel or are close to much of the segment and provide access for primitive recreation opportunities found in two inventoried roadless areas.

- ◆ Determination: Recreation is an outstandingly remarkable value. Diverse settings, with multiple recreation options and outstanding water features including waterfalls and granite tubs and slides, draw visitors from inside and outside the region of comparison. Therefore, recreation is considered outstandingly remarkable.
- **Fish (Habitat)**
 - ◆ Description: Salmon Creek was home to Kern River Rainbow Trout (KRRT). Non-native trout occur below Salmon Creek Falls. Eventually this segment will be restocked with native KRRT as the upper North Fork Kern River begins to retain native fish. This is not one of the priorities for the next 10 years.
 - ◆ Determination: Fish Habitat is not an outstandingly remarkable value. This segment is not a priority for reintroduction of KRRT, therefore fish habitat is not considered outstandingly remarkable.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Rare slender salamanders are present. Mountain yellow-legged frog suitable and historic habitat exists above Salmon Creek Falls.
 - ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Salmon Creek (GIS Number 2.190) is eligible because scenery, recreation, prehistory, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Very little, road and nonmotorized trail crossings

Accessibility: Roads and nonmotorized trails

Water Quality: Good

Classification: Scenic

Salmon Creek (GIS Number 2.252)

Location

- County: Tulare
- Beginning Point: South slope of Sirretta Peak
- End Point: Confluence with Salmon Creek at Big Meadow
- Special Area: Headwaters within Twisselmann Botanical Area

Mileage

- Studied: 2.7
- Eligible: 2.7

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: This segment is within the Woodpecker Inventoried Roadless Area. The Sirretta Peak Trail follows the creek from 23S07 to the Twisselmann Botanical Area. The trail is open to motorcycles but receives little, if any, use and was slated for closure to motorized use in the Mediated Settlement Agreement of 1990.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Recreation opportunities are very limited and the area receives little use. Therefore, recreation is not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.
- **History**
 - ◆ Description: Includes identified and documented historic sites.
 - ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.
- **Botany**
 - ◆ Description: This segment originates within the unique Twisselmann Botanical area. The creek arises from springs within the area and is integral to the unique nature of the Botanical area.
 - ◆ Determination: Botany is an outstandingly remarkable value. Botanical areas are unique and this segment is part of the unique ecosystem. Therefore, botany is considered outstandingly remarkable.

Summary: Salmon Creek (GIS Number 2.252) is eligible because prehistory, history, and botany are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Very little

Accessibility: Very little, road and motorized trail crossings

Water Quality: Good

Classification: Scenic

Sandy Creek (GIS Number 2.192)

Location

- County: Tulare
- Beginning Point: T.25S. R.31E. Sec.1 at 7300' in Giant Sequoia National Monument
- End Point: Forest Boundary at 4500'
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 2.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Sandy Creek is a short creek that begins below Sunday Peak and flows west through a canyon until it reaches Poso Creek. Scenery was identified as a river-related value in the 1990 eligibility study.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. No outstanding scenic features that meet the criteria for this evaluation were identified. Therefore, scenery is not considered outstandingly remarkable.

Summary: Sandy Creek is ineligible because it has no outstandingly remarkable values.

Sheep Creek (GIS Number 2.197)

Location

- County: Tulare
- Beginning Point: T.19S. R.32E. Sec.12 at 9200' in Golden Trout Wilderness
- End Point: Confluence with Willow Creek
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 2.8
- Eligible: 2.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Sheep Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Shotgun Creek (GIS Number 2.199)

Location

- County: Tulare
- Beginning Point: Silver Lake in Golden Trout Wilderness
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 3.8
- Eligible: 3.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: This creek flows through a glaciated landscape with banded layers of glaciated granite, metamorphic roof pendants, and marble create colorful scenic vistas which flow into the Little Kern River. The banded geology and glaciated landscape create scenic vistas across the area.

- ◆ Determination: Scenery is an outstandingly remarkable value. The scenic vistas created by the glaciated landscapes are unique, therefore scenery is considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Multiple National Forest System trails cross this creek at various locations. Backcountry travel opportunities for recreation are available in the summer months and are similar to other creeks in the area. This creek is designated by the State of California as a Heritage and Wild Trout Water for fishing opportunities for Little Kern Golden Trout.
 - ◆ Determination: Recreation is an outstandingly remarkable value. The State of California designated the creek as a Heritage and Wild Trout Water. Therefore, recreation is considered outstandingly remarkable.
- **Geology**
 - ◆ Description: This creek flows through a glaciated landscape with banded layers of glaciated granite, metamorphic roof pendants, and marble.
 - ◆ Determination: Geology is not an outstandingly remarkable value. When compared to the headwaters of the Little Kern River at Farewell Gap, it is not exemplary. Therefore, geology is not considered outstandingly remarkable.
- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Shotgun Creek is eligible because scenery, recreation, and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trails

Water Quality: Excellent

Classification: Wild

Silver Creek (GIS Number 2.200)

Location

- County: Tulare
- Beginning Point: T.19S. R.31E. Sec.12 in Golden Trout Wilderness at 9300
- End Point: Confluence with North Fork Middle Fork Tule River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 2.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Botany**
 - ◆ Description: Silver Creek originates from Maggie Mountain and flows through Silver Creek Giant Sequoia Grove.
 - ◆ Determination: Botany is not an outstandingly remarkable value. Silver Creek Grove is not unique and therefore, botany is not considered outstandingly remarkable.

Summary: Silver Creek is ineligible because it has no outstandingly remarkable values.

Snow Creek (GIS Number 2.202)

Location

- County: Tulare
- Beginning Point: East of Sirretta Pass at 8800'
- End Point: Confluence with Little Trout Creek
- Special Area: None

Mileage

- Studied: 2.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Beautiful views of Sirretta Peak and the Domeland Wilderness can be enjoyed from the National Forest System trail 34E12 along the ridge overlooking Snow Creek.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Views of Sirretta Peak and the Domeland Wilderness are not unique to this watercourse and are visible across the area. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Snow Creek is in a remote location just outside of the Domeland Wilderness and offers backcountry travel opportunities for those seeking solitude and primitive recreation experiences. Motorcycles are allowed on National Forest System

trail 34E12. Challenging trail conditions limit the number of visitors and the potential for user conflicts.

- ◆ Determination: Recreation is not an outstandingly remarkable value. Hiking and backcountry motorcycle opportunities along the creek are not unique or exemplary. Therefore, recreation is not considered outstandingly remarkable.

Summary: Snow Creek is ineligible because it has no outstandingly remarkable values.

Soda Spring Creek (GIS Number 2.205)

Location

- County: Tulare
- Beginning Point: T.18S. R.31E. Sec.36 at the Forest Boundary in Golden Trout Wilderness
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 7.2
- Eligible: 7.2

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Soda Springs Creek is eligible because prehistory and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Excellent

Classification: Wild

South Fork Erskine Creek (GIS Number 2.210)

Location

- County: Kern
- Beginning Point: Northeast of Piute Peak at 7500'
- End Point: Confluence with Erskine Creek
- Special Area: Inspiration Point Botanic Area

Mileage

- Studied: 6.9
- Eligible: 6.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Inspiration Point is visible from some locations along the creek
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Inspiration Point is not river related. Therefore, scenery is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: The South Fork of Erskine Creek flows through a horizontally tilted rock pendant with schists, marble, and hornfels present in the creek. The South Fork of Erskine Creek also has a 40 foot high geologic strata wall in one of its primary tributaries.
 - ◆ Determination: Geology is an outstandingly remarkable value. Exemplary geology is present along the creek. Therefore, geology is considered outstandingly remarkable.
- **Wildlife (Population and Habitat)**
 - ◆ Description: Butterflies, endemic land snails, and slender salamanders are found in this area and are dependent on the rock outcrops and water associated with this creek. In combination with the lower Erskine Creek, this creek provides corridors for movement of all wildlife in the area because water is rare in the Piute Mountains, a very dry area.
 - ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Only two perennial creeks occur in the Piute Mountains and they are important for wildlife as corridors. Dwindling water supplies in the area and the perennial nature of South Fork Erskine Creek make it unique. Therefore, wildlife population and habitat are considered outstandingly remarkable.

- **Botany**

- ◆ Description: This creek and its tributaries are integral to the Inspiration Point Botanical Area, which is a unique ecosystem.
- ◆ Determination: Botany is an outstandingly remarkable value. Inspiration Point Botanical Area is a unique ecosystem. The Inspiration Point Botanical Area and the integral contribution of South Fork Erskine Creek and its tributaries to the Botanical Area make it exemplary. Therefore, botany is considered outstandingly remarkable.

Summary: South Fork Erskine Creek is eligible because botany, geology, and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Old mining road nearby

Water Quality: Very good

Classification: Wild

South Fork Middle Fork Tule River (GIS Number 2.213)

Location

- County: Tulare
- Beginning Point: Quaking Aspen Meadows in Giant Sequoia National Monument
- End Point: Confluence with North Fork Middle Fork Tule River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 12.0
- Eligible: 12.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Beautiful bedrock granite creek with deep pools and falls. Features along the creek provide high visual diversity as the creek travels through multiple transition zones from high elevation meadows and old growth forests, including specimen Giant Sequoias in 3 groves, to lower elevation river canyon woodlands and brush lands.
- ◆ Determination: Scenery is an outstandingly remarkable value. Due to the high visual diversity of the creek as it travels through multiple transition zones and the outstanding visual features, including specimen Giant Sequoias, scenery is considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Fishing, hiking, mountain biking, horseback riding, viewing giant sequoias, and camping are popular activities along the South Fork Middle Fork Tule River. During the winter, visitors seeking quiet winter recreation enjoy snowshoeing and cross-country skiing. Belknap Campground is the only developed recreation site and there are trailheads at Quaking Aspen, Cedar Slope, and Camp Nelson. National Forest System trail 31E30 travels along the river from Quaking Aspen to Camp Nelson, passing through 3 Giant Sequoia groves. One of the outstanding features along the trail is a hollowed out, living Giant Sequoia tree that visitors can walk, bike, or ride a horse through.
- ◆ Determination: Recreation is an outstandingly remarkable value. The trail, developed facilities, and other access provide outstanding opportunities for visitors to experience 3 Giant Sequoia groves. Recreation opportunities are exemplary. Therefore, recreation is considered outstandingly remarkable.

- **Botany**

- ◆ Description; Along the creek, high elevation meadows, old growth forests, and the Belknap, Wheel Meadow and McIntyre Groves form a unique ecosystem. Some of the outstanding botanical values include specimen Giant Sequoias in 3 groves.
- ◆ Determination: Botany is an outstandingly remarkable value. South Fork Middle Fork Tule River ecosystem, including 3 Giant Sequoia groves, is unique. Therefore, botany is considered outstandingly remarkable.

Summary: South Fork Middle Fork Tule River is eligible because scenery, recreation, and botany are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Springs in the watershed are used by homes but the river is perennial

Shoreline Development: Roads and some recreation and residential homes

Accessibility: Roads

Water Quality: Excellent

Classification: Recreational

South Mountaineer Creek (GIS Number 2.215)

Location

- County: Tulare
- Beginning Point: T.20S. R.31E. Sec.11 at 8400' in Golden Trout Wilderness
- End Point: Confluence with Mountaineer Creek
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 3.1
- Eligible: 3.1

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: South Mountaineer Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Excellent

Classification: Wild

Speas Creek (GIS Number 2.217)

Location

- County: Tulare
- Beginning Point: Speas Meadow
- End Point: Confluence with Tobias Creek
- Special Area: None

Mileage

- Studied: 3.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.

- ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

Summary: Speas Creek is ineligible because it has no outstandingly remarkable values.

Stark Creek (GIS Number 2.219)

Location

- County: Kern
- Beginning Point: R31E T28S on Breckinridge Mountain
- End Point: Confluence with Lower Kern River at Richbar
- Special Area: None

Mileage

- Studied: 7.4
- Eligible: 7.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population and Habitat)**
 - ◆ Description: Very rare Kern Canyon Slender Salamander and Condor are present along this creek. The salamander is unusually found close to water and certainly within ¼ mile of the creek.
 - ◆ Determination: Wildlife Population and Habitat are outstandingly remarkable values. Due to the presence of rare, exemplary species and habitat, wildlife population and habitat are considered outstandingly remarkable.
- **History**
 - ◆ Description: Includes identified and documented historic sites.
 - ◆ Determination: History is an outstandingly remarkable value. Identified and documented historic sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, history is considered outstandingly remarkable.

Summary: Stark Creek is eligible because history and wildlife population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Road and nonmotorized trail

Water Quality: Good

Classification: Scenic

Starvation Creek (GIS Number 2.220)

Location

- County: Tulare
- Beginning Point: North of Starvation Grove at 5600'
- End Point: Confluence with Tyler Creek
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 3.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population and Habitat)**
 - ◆ Description: Starvation Grove was the last known condor nest on the forest prior to 2018. The creek and its tributaries are an integral part of the grove.
 - ◆ Determination: Wildlife Population and Habitat are not outstandingly remarkable values. Condors are not directly-dependent on the creek and have not reoccupied this site. Due to the lack of occupancy by condors in the grove and the locations of possible nest trees being independent of the creek, wildlife population and habitat are not considered outstandingly remarkable.
- **Botany**
 - ◆ Description: Starvation Grove is the one of the southernmost groves of Giant Sequoias.
 - ◆ Determination: Botany is not an outstandingly remarkable value. Starvation Grove is not exemplary and therefore, it is not considered outstandingly remarkable.

Summary: Starvation Creek is ineligible because it has no outstandingly remarkable values.

Table Meadow Creek (GIS Number 2.223)

Location

- County: Tulare
- Beginning Point: Northwest of White Mountain at 7900'
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 2.4
- Eligible: 2.4

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.
- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Table Meadow Creek is eligible because prehistory and fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Excellent

Classification: Wild

Tamarack Creek (GIS Number 2.224)

Location

- County: Tulare
- Beginning Point: Near Coyote Pass at 10,200' in Golden Trout Wilderness
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 3.9
- Eligible: 3.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Tamarack Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: Excellent

Classification: Wild

Taylor Creek (GIS Number 2.225)

Location

- County: Tulare
- Beginning Point: T.24S. R.34E. Sec.9 south of Domeland Wilderness boundary
- End Point: Confluence with South Fork Kern River
- Special Area: Partly within Domeland Wilderness

Mileage

- Studied: 7.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Habitat)**
 - ◆ Description: Historically, golden trout habitat occurs below the falls.
 - ◆ Determination: Fish Habitat is not an outstandingly remarkable value. The water quality in this creek is not always good, due to the cattle grazing and using the creek as a wallow in places. Therefore, fish habitat is not considered outstandingly remarkable.

- **Wildlife (Habitat)**

- ◆ Description: Mountain yellow-legged frog suitable habitat occurs above the falls.
- ◆ Determination: Wildlife Habitat is not an outstandingly remarkable value. Clean water is not always available in the creek due to cattle. Springs have been tapped for years to irrigate meadows and are no longer suitable for Mountain yellow-legged frogs as a result. Due to poor water quality and disruption of springs, wildlife habitat is not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

Summary: Taylor Creek is ineligible because it has no outstandingly remarkable values.

Thompson Creek (GIS Number 2.228)

Location

- County: Kern
- Beginning Point: North Slope of Piute Peak at 8000'
- End Point: Forest boundary
- Special Area: None

Mileage

- Studied: 2.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Thompson Creek flows through a steep canyon below Piute Peak with views across to Breckenridge.
- ◆ Determination: Scenery is not outstandingly remarkable. Views to Breckenridge and Piute Peak are not unique or exemplary. Therefore, scenery is not considered outstandingly remarkable.

Summary: Thompson Creek is ineligible because it has no outstandingly remarkable values.

Trout Creek (GIS Number 2.233.1)

Location

- County: Tulare
- Beginning Point: South of Corral Meadow at 8700
- End Point: Confluence with Domelands Wilderness near Boone Meadow
- Special Area: None

Mileage

- Studied: 3.9
- Eligible: 3.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ♦ Description: Trout Creek tumbles down from high elevation meadows through high elevation forests to dry brush lands to the Domeland Wilderness. There are spectacular views of the many granite monoliths after which the area is named. The riparian area contrasts with the high desert landscape as the creek flows through lower elevations.
 - ♦ Determination: Scenery is not an outstandingly remarkable value. The views of monoliths are beautiful from many locations within and outside the Domeland Wilderness, however these views are not necessarily river-related. In addition, the contrast of the riparian area to the high desert as it flows through the lower elevations is not exceptional or unique. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ♦ Description: Hiking, backcountry travel, and fishing for golden trout. hiking and backcountry travel are recreation river related values.
 - ♦ Determination: Recreation is not an outstandingly remarkable value. Hiking and backcountry travel opportunities are not unique or exemplary. The fishing opportunity for heritage trout is not identified by the State of California. Therefore, recreation is not considered outstandingly remarkable.
- **Fish (Habitat)**
 - ♦ Description: Trout Creek is a Critical Aquatic Refuge for golden trout. This is an area where we can place native trout because it does have access by road.
 - ♦ Determination: Fish Habitat is an outstandingly remarkable value. Trout Creek has good habitat for golden trout and is an exemplary creek for future reintroductions of golden trout during recovery actions. Therefore, fish habitat is considered outstandingly remarkable.

- **Wildlife (Habitat)**

- ◆ Description: Trout Creek and its tributaries form a complex of connected perennial riparian habitat that is valuable to wildlife.
- ◆ Determination: Wildlife Habitat is not an outstandingly remarkable value. Similar riparian corridors exist along every perennial creek in the area and it is not unique. Therefore, wildlife habitat not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Trout Creek is eligible because fish habitat and prehistory are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: Little to none

Accessibility: Road, motorized trail,

Water Quality: Good

Classification: Scenic

Trout Creek (GIS Number 2.233.2)

Location

- County: Tulare
- Beginning Point: At Boundary of Domelands Wilderness near Boone Meadow
- End Point: Confluence with South Fork Kern River
- Special Area: Within Domeland Wilderness

Mileage

- Studied: 11.8
- Eligible: 11.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Trout Creek tumbles down through dry brush lands in the Domeland Wilderness and then enters the South Fork Kern River. There are spectacular views of the many granite monoliths after which the area is named. The riparian area contrasts with the high desert landscape as the creek flows through lower elevations.
- ◆ Determination: Scenery is not an outstandingly remarkable value. The views of monoliths are beautiful from many locations within and outside the Domeland Wilderness, however these views are not necessarily river-related. In addition, the contrast of the riparian area to the high desert as it flows through the lower elevations is not exceptional or unique. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Hiking and fishing for golden trout. along the creek are recreation river related values.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Hiking and backcountry travel opportunities are not unique or exemplary. The fishing opportunity for heritage trout is not identified by the State of California. Therefore, recreation is not considered outstandingly remarkable.

- **Fish (Habitat)**

- ◆ Description: Trout Creek is a Critical Aquatic Refuge for golden trout.
- ◆ Determination: Fish Habitat is an outstandingly remarkable value. Trout Creek has good habitat for golden trout and is an exemplary creek for future reintroductions of golden trout during recovery actions. Therefore, fish habitat is considered outstandingly remarkable.

- **Wildlife (Habitat)**

- ◆ Description: Trout Creek and its tributaries form a complex of connected perennial riparian habitat that is valuable to wildlife.
- ◆ Determination: Wildlife Habitat is not an outstandingly remarkable value. Similar riparian corridors exist along every perennial creek in the area and it is not unique. Therefore, wildlife habitat not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
- ◆ Determination: Prehistory is an outstandingly remarkable value. Identified and documented prehistoric sites are rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is considered outstandingly remarkable.

Summary: Trout Creek is eligible because fish habitat and prehistory are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: nonmotorized trails

Water Quality: Good

Classification: Wild

White River (GIS Number 2.241)

Location

- County: Tulare
- Beginning Point: East of Sugarloaf Mountain Park at 6500'
- End Point: Forest boundary
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 5.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Includes a site where there is evidence of occupation or use by Native Americans.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Identified and documented prehistoric sites are similar to others within the region of comparison and are not rare, unusual, or one-of-a-kind. Based upon existing knowledge and data, prehistory is not considered outstandingly remarkable.

Summary: White River is ineligible because it has no outstandingly remarkable values.

Willow Creek (GIS Number 2.242)

Location

- County: Tulare
- Beginning Point: Near Coyote Lakes and wilderness boundary at 9,000' in Golden Trout Wilderness
- End Point: Confluence with Little Kern River
- Special Area: Golden Trout Wilderness

Mileage

- Studied: 4.3
- Eligible: 4.3

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population and Habitat)**
 - ◆ Description: Little Kern Golden Trout, a species of golden trout federally listed as threatened, and its habitat, are present.
 - ◆ Determination: Fish Population and Habitat are outstandingly remarkable values.

Summary: Willow Creek is eligible because fish population and habitat are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: None

Shoreline Development: None

Accessibility: Nonmotorized trail

Water Quality: High

Classification: Wild

Wilson Creek (GIS Number 2.244)

Location

- County: Tulare
- Beginning Point: North of Tule River Indian Reservation in Black Mountain Grove at 5900'
- End Point: Confluence with South Fork Middle Fork Tule River
- Special Area: Giant Sequoia National Monument

Mileage

- Studied: 2.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

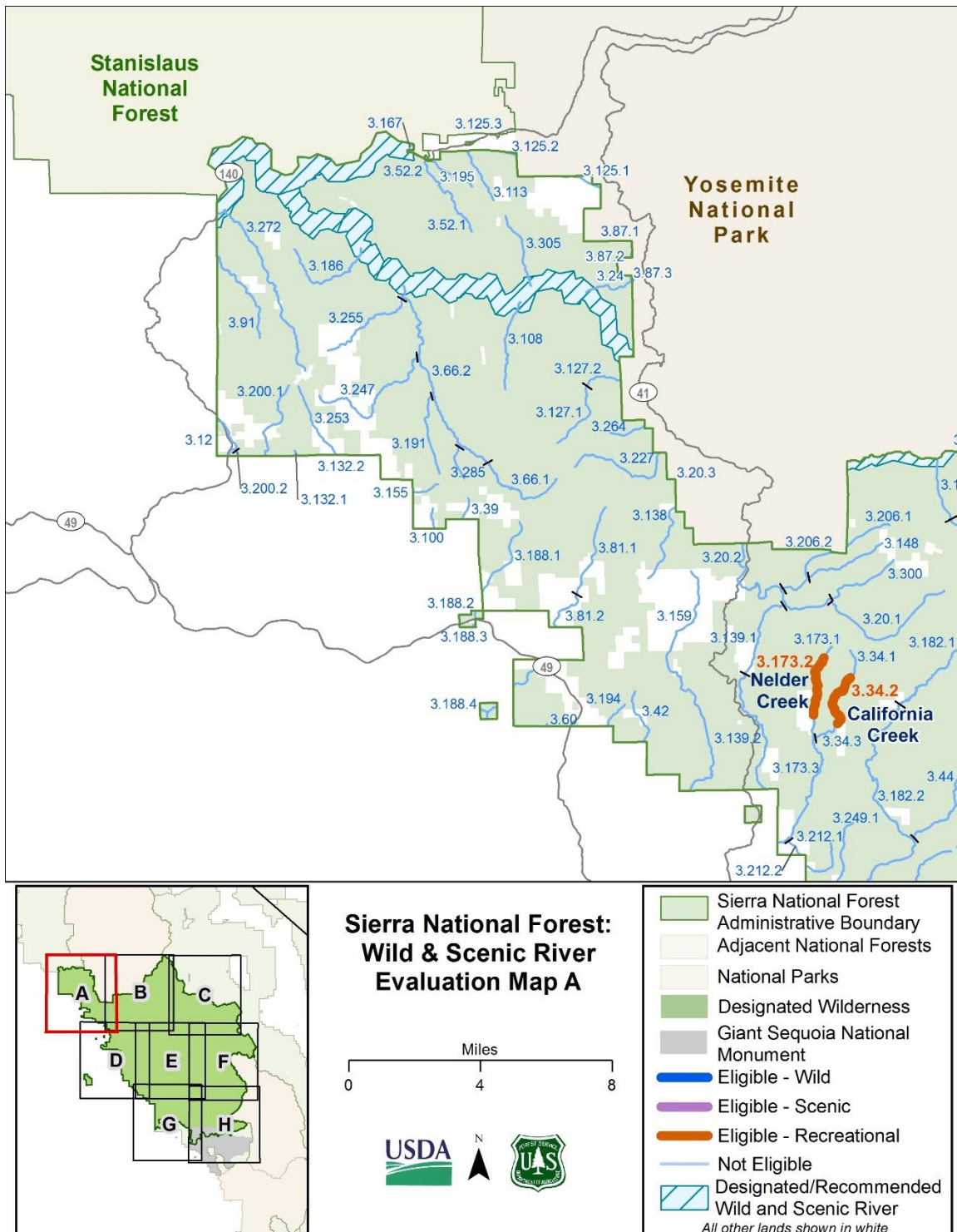
Outstandingly Remarkable Values

- **Botany**
 - ◆ Description: Wilson Creek drains from the Black Mountain Giant Sequoia Grove.

- ◆ Determination: Botany is not an outstandingly remarkable value. Wilson Creek is similar to many other creeks that provide water within other Giant Sequoia groves and is not exemplary. There are other creeks that meander within groves that have a better direct interaction with the understory and ecology of the grove. Therefore, botany is not considered outstandingly remarkable.

Summary: Wilson Creek is ineligible because it has no outstandingly remarkable values.

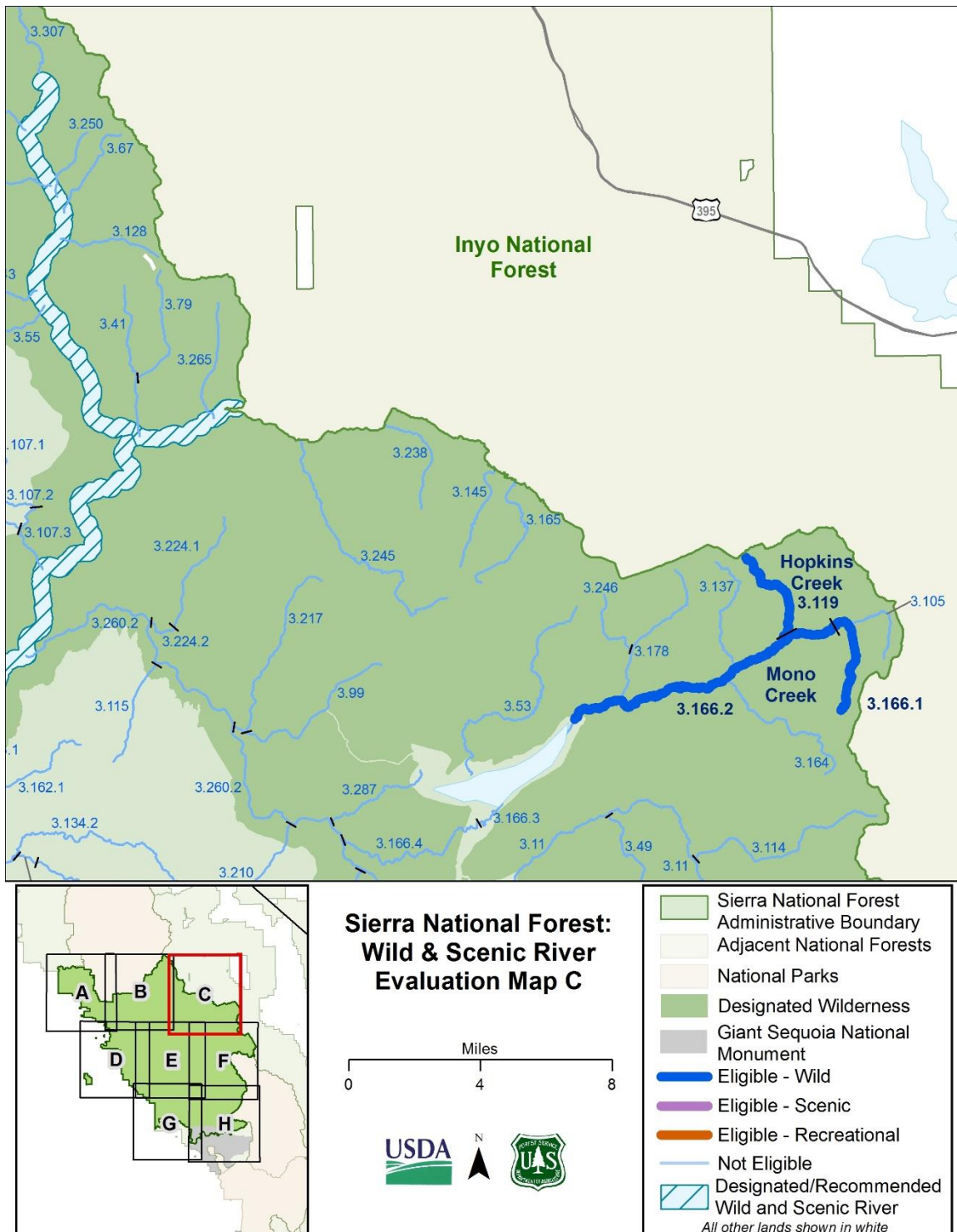
Sierra National Forest



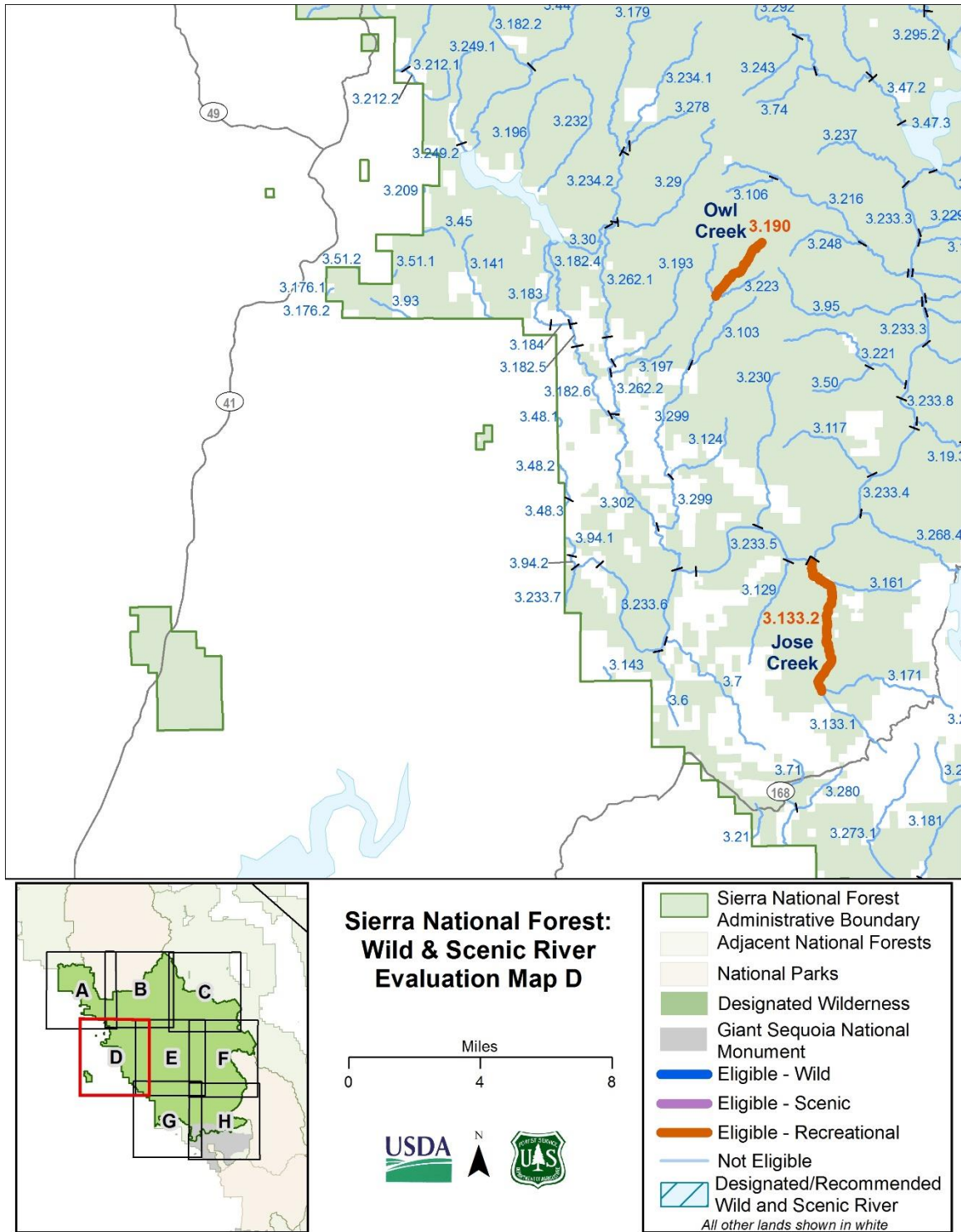
Map C-11. Sierra National Forest Wild and Scenic River Evaluation Map A



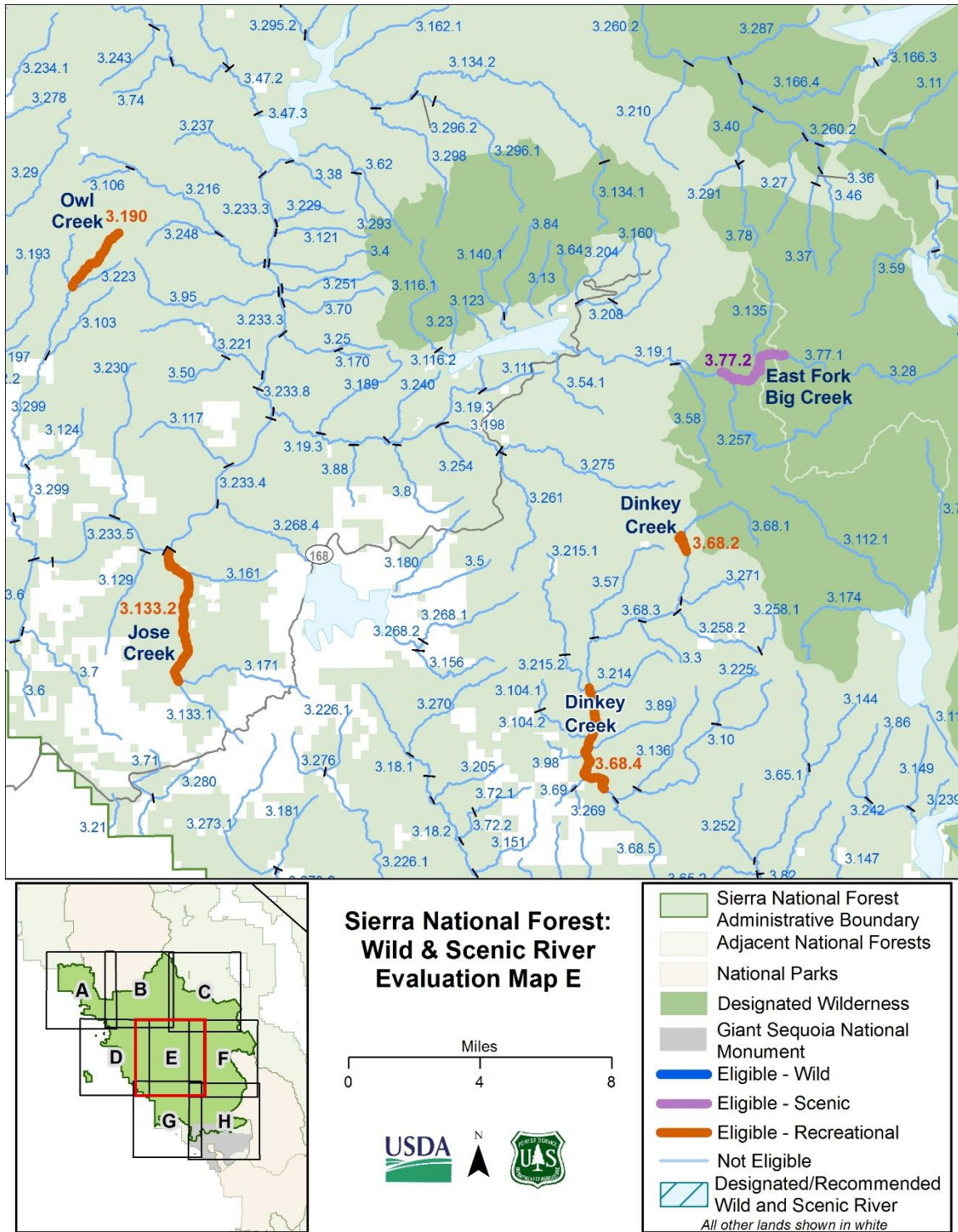
Map C-12. Sierra National Forest Wild and Scenic River Evaluation Map B



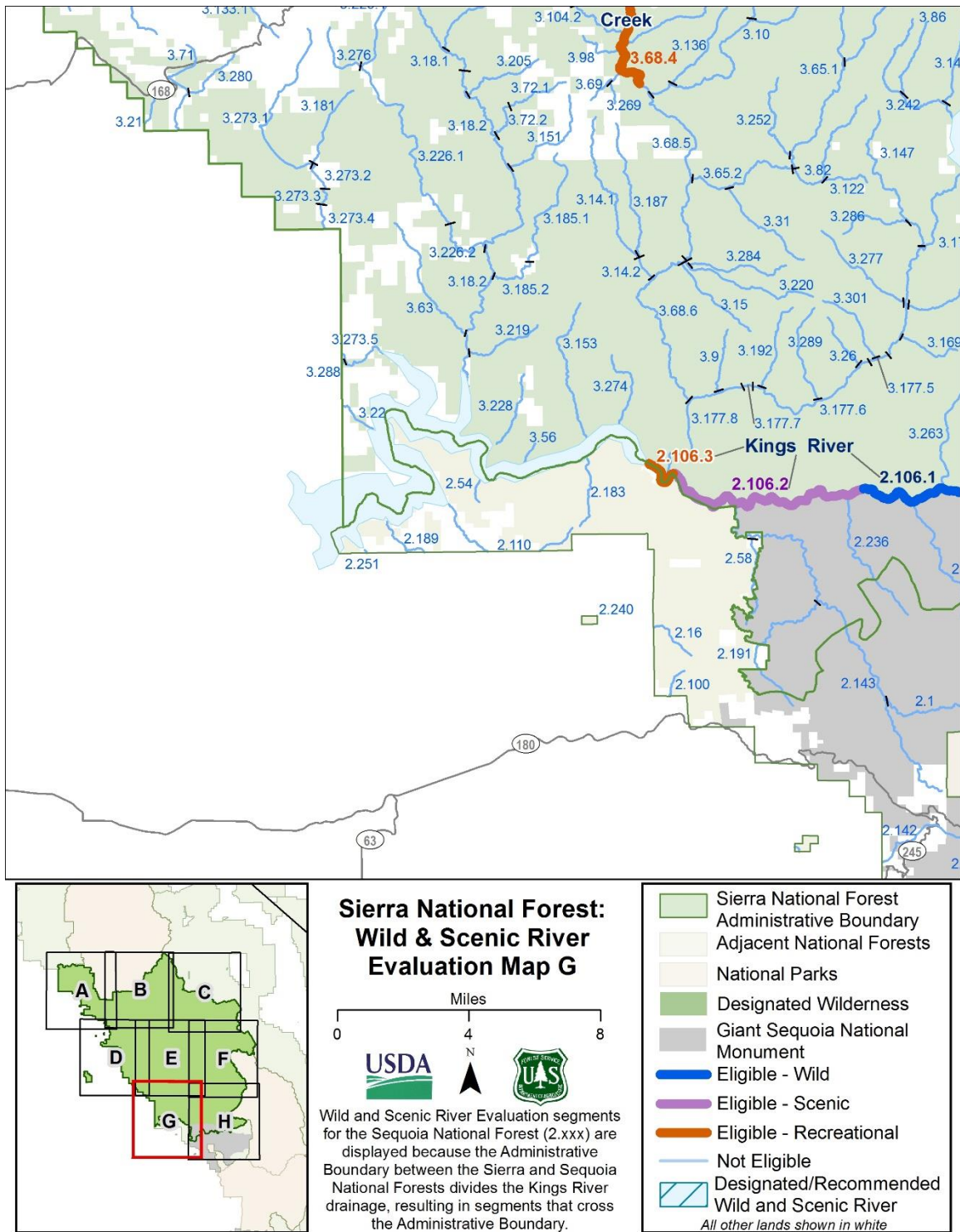
Map C-13. Sierra National Forest Wild and Scenic River Evaluation Map C



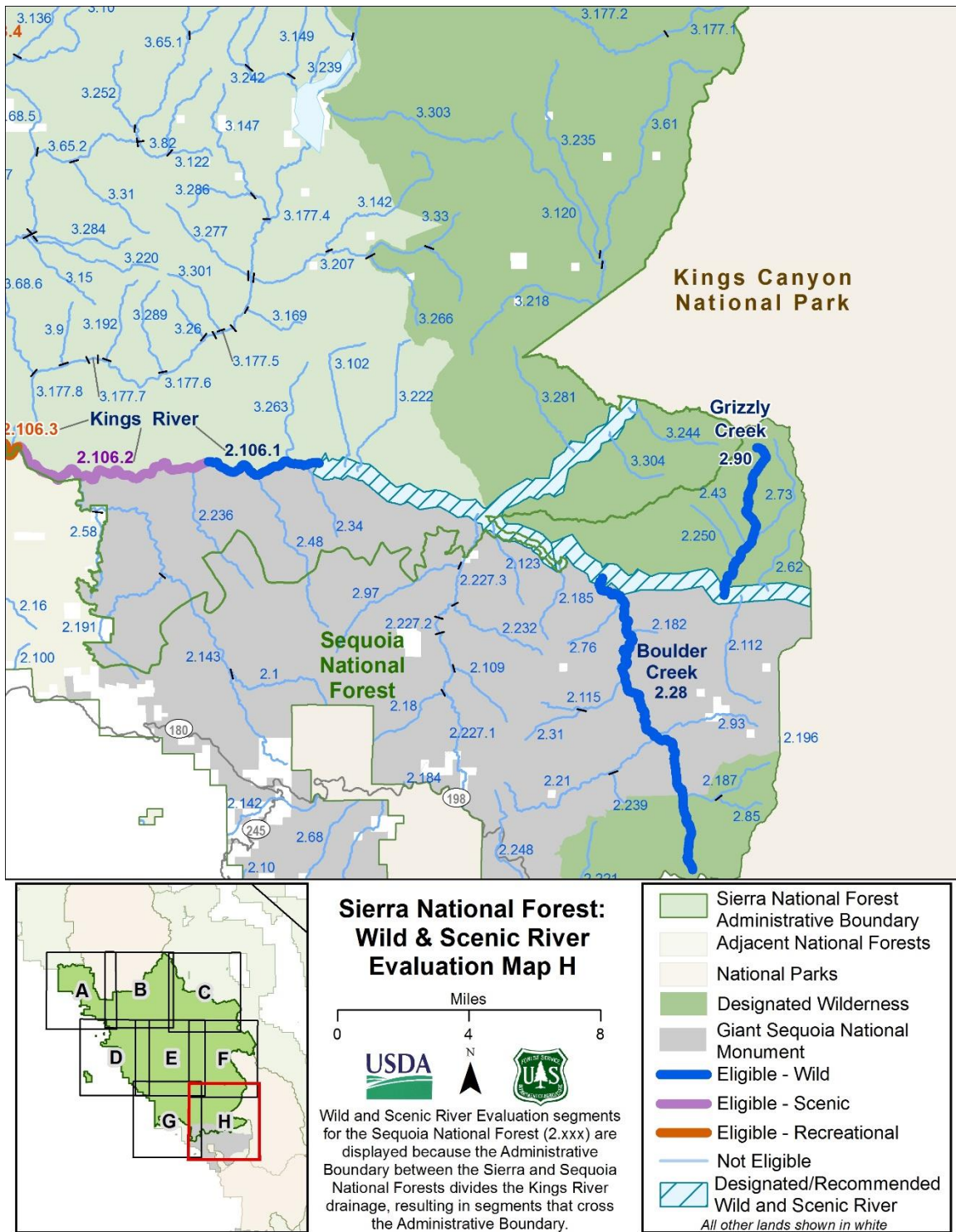
Map C-14. Sierra National Forest Wild and Scenic River Evaluation Map D



Map C-15. Sierra National Forest Wild and Scenic River Evaluation Map E



Map C-17. Sierra National Forest Wild and Scenic River Evaluation Map G



Map C-18. Sierra National Forest Wild and Scenic River Evaluation Map H

River Segments Not Previously Studied

410 river segments (approximately 1,460.9 miles) had not been previously studied. 390 of these river segments (approximately 1,414.2 miles) are free flowing and 20 river segments (approximately 46.7 miles) are not free flowing. Table C-2, Table C-6, the evaluation maps above, Map C-20, and the River Segment Details section below provide more information about these river segments.

Table C-6. Sierra National Forest river segments not previously studied and not free flowing

Segment Name	GIS Number	Mileage	Free Flow
Browns Creek Ditch	3.30	2.6	No, engineered watercourse
Coon Creek	3.54.2	0.3	No, under Huntington Lake (Reservoir)
Helms Creek	3.112.2	3.6	No, under Courtright Reservoir
Home Camp Creek	3.116.2	1.2	No, under Huntington Lake (Reservoir)
Line Creek	3.140.2	0.4	No, under Huntington Lake (Reservoir)
Mill Creek	3.162.2	0.2	No, under Mammoth Pool Reservoir
Mono Creek	3.166.3	5.2	No, under Lake Thomas A. Edison (Reservoir)
North Fork Kings River	3.177.3	3.7	No, under Wishon Reservoir
North Fork Kings River	3.177.5	0.7	No, under Black Rock Reservoir
North Fork Kings River	3.177.7	0.4	No, under Reservoir at Balch Powerplant
North Fork Willow Creek	3.182.3	4.7	No, under Bass Lake (Reservoir)
North Fork Willow Creek	3.182.5	0.8	No, under Manzanita Lake (Reservoir)
Number Three Ditch	3.183	3.7	No, engineered watercourse
Number Three Forbay Penstock	3.184	0.7	No, engineered watercourse
San Joaquin River	3.233.2	7.0	No, under Mammoth Pool Reservoir
San Joaquin River	3.233.5	5.0	No, under Redinger Lake (Reservoir)
San Joaquin River	3.233.7	2.3	No, under Kerckhoff Lake (Reservoir)
San Joaquin River	3.233.8	1.2	No, under Dam Six Lake (Reservoir)
Slide Creek	3.249.2	0.5	No, under Bass Lake (Reservoir)
South Fork San Joaquin River	3.260.1	2.5	No, under Florence Lake (Reservoir)
Total	-	46.7	-

10 river segments (approximately 35.5 miles) are eligible because they have free flow and outstandingly remarkable values. None of these eligible river segments were previously studied. Table C-7, the evaluation maps above, Map C-20, and the River Segment Details section below provide more information about these river segments.

Table C-7. Sierra National Forest Wild and Scenic River Eligibility Study Results Summary

Study Results	# of River Segments	Approximate Mileage
Total Eligible	10	35.5 miles
Preliminarily Classification: Wild	3	17.1
Preliminarily Classification: Scenic	1	3.0
Preliminarily Classification: Recreational	6	15.4

Region of Comparison

- **Scenery** – Sierra National Forest. Few National Forests offer the range of scenic attractions found in the Sierra National Forest. The Sierra National Forest landscape is quite diverse, ranging from steeply rolling chaparral and grass-woodland foothills to barren windswept crags on the Sierra Crest. The mid-elevations are characterized by steep-walled river canyons interspersed with gentler highly productive heavily forest areas. At the high elevations the knife-edged ridges, sharp peaks, and steep-walled basins, frequently containing lakes, owe their form to the abrading action of glaciers. The lower elevations are characterized by rolling topography and foothills. Existing designated wild and scenic rivers within the Sierra National Forest flow through exceptional scenery. For example, glaciated peaks, towering waterfalls, lakes, alpine and subalpine meadows, and spectacular wildflower displays surround the alternating pools and cascades of the Merced River and South Fork Merced River. Wildflower displays are spectacular. Scenery along the Kings River, Middle Fork Kings River, and South Fork Kings River includes spectacular granite canyon walls and granite domes, along with waterfalls.
- **Recreation** – Sierra Nevada Mountain Range. This area includes the southern Sierra Nevada Mountain Range including portions of the Inyo and Sequoia National Forests, as well as several other national forests. The region of comparison was determined based on the recreation values common across the mountain range and likely travel distances for similar recreation opportunities for both local visitors and non-local visitors.
- **Geology** – Southern Sierra Nevada Mountain Range. The geomorphology (geology and landforms) of the Sierra National Forest is similar to the geomorphology of Yosemite National Park, Sequoia and Kings Canyon National Parks, Sequoia National Forest, and Giant Sequoia National Monument. Glacial processes have occurred throughout the Southern Sierra Nevada at higher elevations and glacial landforms and features are ubiquitous. There are geological differences in the eastern Sierra Nevada, which has many volcanic geologic processes that are not common on the Sierra National Forest. North of the Sierra National Forest there are also different geological processes, including substantial lahar flow deposits that have created inverted topography from stream erosion, that are not present on the Sierra National Forest.
- **Fisheries** – State of California. The State of California has 11 native heritage trout. Golden trout are the State Fish of California. Due to the high interest in California for conservation and angling for heritage trout, the region of comparison for fish populations and habitat is the State of California.
- **Wildlife** – Southern Sierra Nevada Mountain Range, including Yosemite National Park, Sequoia and Kings Canyon National Parks, Sequoia National Forest, and Giant Sequoia National Monument. The Sierra National Forest is in a Mediterranean ecosystem and has many months with no rain. This elevates the importance of water sources for most wildlife. Several species are associated with creeks all the time. Several endemic species of salamander are present in and along creeks or rivers year round. Most birds and mammals move around and use these areas as corridors and for food and water. Just as an oasis in the desert attracts many wildlife and has value because of its rarity on the landscape, perennial creeks and rivers on the Sierra National Forest attract and are essential to wildlife. These areas have high value for breeding, foraging, and dispersal. Since some species are endemic to the Sierra National Forest, and some are found throughout the Southern Sierra Nevada

Mountain Range, the region of comparison for wildlife populations and habitat is the Southern Sierra Nevada Mountain Range.

- **Prehistory/Cultural** – Sierra National Forest. Cultural/Prehistory value were evaluated for sites associated with the indigenous occupation of the Sierra National Forest, including the Western Mono tribes, as well as Miwuk and Yokuts. Instead of requiring comparison of the uniqueness or relative importance of archaeological sites to dissimilar properties associated with other tribal groups in different areas of the state of California or even the Sierra Nevada mountains, this parochial concentration is appropriate for two general reasons. First, it allows for a relevant and unique focus on cultural groups. Of particular importance in this regard are historic and late prehistoric archaeological sites related to the tribes that adapted to and lived in the mountains and/or foothills of the contemporary Sierra National Forest. Their long-standing distinctive cultural adaptation and strong traditional affinity to Sierra National Forest lands provides a context for evaluating the significance of sites as representative of their culture in ancestral as well as contemporary terms.
- **History** –State of California. Since many of the historic themes found on the Sierra National Forest are common throughout the state or at least the Sierra Nevada region, this level of comparison is appropriate. Themes include the Gold Rush and subsequent mining operations, cattle ranching, livestock (including sheep) grazing, the emergence of the Forest Service as a land management agency, homesteading, fur trapping, hydroelectric power development, historic themes related to inter-regional, and even international cultural, social, and economic patterns. The evaluation of historic sites on the Sierra National Forest focused on the value of a site as it represents a local, important event or trend that is connected to and significant in light of a broader geographic context.
- **Botany** – Sierra Nevada Mountain Range. Botanic Areas were first defined for the unique, endemic, and rare plants present in the areas by comparing across the Sierra Nevada Mountain Range to determine which plant species are unique.

Outstandingly Remarkable Values

The Interagency Wild and Scenic Rivers Coordinating Council technical paper “The Wild and Scenic River Study Process,” describes the baseline criteria for outstandingly remarkable scenery, recreation, geology, fish and wildlife populations and habitat, prehistory/cultural, and history values. Outstandingly remarkable botanical values are based upon unique and rare plants and vegetation types. The Sierra National Forest interdisciplinary team used similar additional criteria to the Sequoia National Forest for determining if any river-related values are outstandingly remarkable values, described above.

River Segment Details

Alder Creek (GIS Number 3.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Mount Hooper

- End Point: South Fork San Joaquin River
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Alder Creek is ineligible because it has no outstandingly remarkable values.

Anderson Creek (GIS Number 3.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters are east of Long Top and west of Corral Mountain
- End Point: North Fork Kings River
- Special Area: John Muir Wilderness

Mileage

- Studied: 2.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere

within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Anderson Creek is ineligible because it has no outstandingly remarkable values.

Aspen Creek (GIS Number 3.4)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters near Horsethief Lake
- End Point: Confluence with San Joaquin River
- Special Area: None

Mileage

- Studied: 3.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Aboriginal hamlet associated with meadow and creek.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Aspen Creek is ineligible because it has no outstandingly remarkable values.

Bald Mill Creek (GIS Number 3.7)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters near Bald Mountain near Meadow Lakes - private property
- End Point: San Joaquin River - crosses private land
- Special Area: Backbone Creek Research Natural Area

Mileage

- Studied: 5.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Aboriginal Poshgisha Mono Hamlet associated with creek.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within the region of comparison and this is not an exemplary prehistoric site. Therefore, the site is not considered outstandingly remarkable.
- **Botany**
 - ◆ Description: Abundant *Carpenteria* (*Carpenteria californica*), a species native to the Sierra Nevada foothills that grows along the edges of seasonal creeks and is only found within the Sierra National Forest and some nearby private lands, beautiful pools, diverse chaparral distinctive of Sierra National Forest San Joaquin River watershed.
 - ◆ Determination: Botany is not an outstandingly remarkable value. Although *Carpenteria* exists within the segment, this species also exists elsewhere within the region of comparison and this is not an exemplary growth area. Therefore, the segment is not considered outstandingly remarkable.

Summary: Bald Mill Creek is ineligible because it has no outstandingly remarkable values.

Balsam Creek (GIS Number 3.8)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters northeast of Balsam Meadow
- End Point: Big Creek
- Special Area: None

Mileage

- Studied: 3.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Middle Archaic to Transitional Periods aboriginal hamlets associated with creek.

- ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Balsam Creek is ineligible because it has no outstandingly remarkable values.

Bear Creek (GIS Number 3.10)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters near Nelson Mountain
- End Point: Dinkey Creek
- Special Area: None

Mileage

- Studied: 8.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Aboriginal hamlets associated with creek.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Bear Creek (GIS Number 3.10) is ineligible because it has no outstandingly remarkable values.

Bear Creek (GIS Number 3.11)

Location

- Ranger District: High Sierra

- County: Fresno
- Beginning Point: Confluence of Bear Creek and East Fork Bear Creek, west of Upper Bear Creek Meadow
- End Point: South Fork San Joaquin River
- Special Area: John Muir Wilderness

Mileage

- Studied: 11.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Variety Class A (Distinctive). Barren granite-walled canyons on the Sierra Crest interspersed with patches of forested areas. Consists of views of Bear Dam Diversion, Twin Falls, and several nice crystal-clear and emerald-green pools near Bear Creek Trail.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are views of canyons, forest, dams, falls, and pools, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Glaciated valley with glacial erosional and depositional landforms (moraines) as well as a variety of granitic bedrock bodies and metamorphic rocks.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Bear Creek (GIS Number 3.11) is ineligible because it has no outstandingly remarkable values.

Bear Meadow Creek (GIS Number 3.14.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters southwest Dinkey Mountain in Bear Meadow
- End Point: Oak Flat Creek
- Special Area: None

Mileage

- Studied: 5.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Aboriginal hamlets and Middle Archaic occupation.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Bear Meadow Creek is ineligible because it has no outstandingly remarkable values.

Bench Canyon (GIS Number 3.17)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters Blue Lake
- End Point: North Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 3.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Bench Canyon is ineligible because it has no outstandingly remarkable values.

Big Creek (GIS Number 3.18.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence of unnamed stream at 10S18, 0.7 miles upstream (north) of the Bretz Mill site
- End Point: Pine Flat Reservoir
- Special Area: None

Mileage

- Studied: 13.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Middle Archaic through Late Prehistoric period prehistoric trail system, as well as late Prehistoric through early 20th century villages, hamlets and Indian allotments associated with the Poshgisha and Holkoma Mono peoples.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the area of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Big Creek (GIS Number 3.18.2) is ineligible because it has no outstandingly remarkable values.

Big Creek (GIS Number 3.19.3)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: South side of Huntington Lake at the Gaging Station near Dam.
- End Point: San Joaquin River east of Chawanakee Flats
- Special Area: None

Mileage

- Studied: 9.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **History**
 - ◆ Description: Big Creek Hydro System Historic District.
 - ◆ Determination: History is not an outstandingly remarkable value. Other hydropower sites also exist elsewhere within the region of comparison. Therefore, this site is not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Mono cultural property. Mono peoples are only found on the Sierra National Forest.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Big Creek (GIS Number 3.19.3) is ineligible because it has no outstandingly remarkable values.

Big Creek (GIS Number 3.20.2)

Location

- Ranger District: Bass Lake
- County: Madera and Mariposa
- Beginning Point: Confluence with White Chief Branch
- End Point: Forest boundary with Yosemite National Park, north of Summerdale Campground
- Special Area: None

Mileage

- Studied: 6.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Aboriginal hamlets associated with creek
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within

the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Big Creek (GIS Number 3.20.2) is ineligible because it has no outstandingly remarkable values.

Billy Creek (GIS Number 3.23)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters east of Home Camp Research Natural Area
- End Point: Huntington Lake
- Special Area: 0.9 miles is in Kaiser Wilderness

Mileage

- Studied: 1.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ♦ Description: Aboriginal hamlets associated with creek eligible for National Register of Historic Places listing.
 - ♦ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Billy Creek is ineligible because it has no outstandingly remarkable values.

Bishop Creek (GIS Number 3.24)

Location

- Ranger District: Bass Lake
- County: Mariposa
- Beginning Point: Forest boundary Yosemite National Park
- End Point: South Fork Merced River
- Special Area: None

Mileage

- Studied: 1.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Early Archaic occupation. A notable change in the archaeological record for this period is a dramatic increase in the number of ground stone tools, suggesting an increased dependence on plant resources.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Bishop Creek is ineligible because it has no outstandingly remarkable values.

Black Rock Creek (GIS Number 3.26)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters east Black Rock
- End Point: Kings River
- Special Area: None

Mileage

- Studied: 1.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Aboriginal hamlets associated with creek.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Black Rock Creek is ineligible because it has no outstandingly remarkable values.

Boulder Creek (GIS Number 3.28)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters west of Dutch Meadow
- End Point: South Fork San Joaquin River at Florence Lake
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Boulder Creek is ineligible because it has no outstandingly remarkable values.

Burnt Corral Creek (GIS Number 3.32)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Thompson Pass
- End Point: Post Corral Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 6.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Burnt Corral Creek is ineligible because it has no outstandingly remarkable values.

Cabin Creek (GIS Number 3.33)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Chain Lakes
- End Point: Rancheria Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 1.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Cabin Creek is ineligible because it has no outstandingly remarkable values.

California Creek (GIS Number 3.34.2)

Location

- Ranger District: Bass Lake

- County: Madera
- Beginning Point: Northeast boundary Nelder Grove Historic Area
- End Point: Southern boundary Nelder Grove Historic Area
- Special Area: Nelder Grove Historic Area

Mileage

- Studied: 1.8
- Eligible: 1.8

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: There are Giant Sequoias along the creek, within the Nelder Grove Historic Area, that are accessible via the Chimney trail.
 - ◆ Determination: Scenery is an outstandingly remarkable value. The Giant Sequoias are unique and exemplary scenic values.
- **Recreation**
 - ◆ Description: The Nelder Grove Historic Area contains hiking trails through a unique landscape for nature viewing.
 - ◆ Determination: Recreation is an outstandingly remarkable value. While the 2017 Railroad Fire impacted the area, the area continues to offer unique recreation opportunities.
- **Botany**
 - ◆ Description: There are Giant Sequoias along the creek, within the Nelder Grove Historic Area. Near the creek, there are also mountain lady's slipper orchid (*Cypripedium montanum*), a Forest sensitive species.
 - ◆ Determination: Botany is an outstandingly remarkable value. Giant Sequoias are rare and only occur in the southern sierras. Lady's slipper orchids are also rare.

Summary: California Creek is eligible because scenery, recreation, and botany are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: A small campground and hiking trails

Accessibility: Roads and nonmotorized trails

Water Quality: Unknown

Classification: Recreational

Cargyle Creek (GIS Number 3.41)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters at Straube Lake
- End Point: Middle Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 5.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Cargyle Creek is ineligible because it has no outstandingly remarkable values.

Chetwood Creek (GIS Number 3.43)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters south of Sadler Peak
- End Point: North Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 2.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Chetwood Creek is ineligible because it has no outstandingly remarkable values.

Chiquito Creek (GIS Number 3.47.2)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Confluence of West Fork Chiquito Creek near the Upper Chiquito campground
- End Point: Mammoth Pool Reservoir
- Special Area: None

Mileage

- Studied: 2.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**

- ♦ Description: The area along Chiquito Creek between Logan Meadow and Mammoth Pool contains a Late Prehistoric period trail hub and a 19th to 20th century Nim cultural property.
- ♦ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Chiquito Creek is ineligible because it has no outstandingly remarkable values.

Cirque Creek (GIS Number 3.49)

Location

- Ranger District: High Sierra
- County: Fresno

- Beginning Point: Headwaters at Cirque Lake
- End Point: Bear Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Cirque Creek is ineligible because it has no outstandingly remarkable values.

Clearwater Creek (GIS Number 3.50)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters east of Source Point
- End Point: Ross Creek
- Special Area: None

Mileage

- Studied: 2.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Traditional and cultural site.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within

the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: Clearwater Creek is ineligible because it has no outstandingly remarkable values.

Cold Creek (GIS Number 3.53)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters west of Silver Pass Lake
- End Point: Lake Thomas A. Edison (Reservoir)
- Special Area: John Muir Wilderness

Mileage

- Studied: 9.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, spectacular lateral glacial moraines, Graveyard Meadow Glacial lake lacustrine deposits.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Cold Creek is ineligible because it has no outstandingly remarkable values.

Cora Creek (GIS Number 3.55)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters at Cora Lakes
- End Point: North Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 3.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Cora Creek is ineligible because it has no outstandingly remarkable values.

Cow Creek (GIS Number 3.57)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at north of Willow Meadow south of Forest Road 9S62
- End Point: Dinkey Creek
- Special Area: None

Mileage

- Studied: 4.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population)**
 - ◆ Description: Lahontan cutthroat trout population is one of 14 recognized subspecies of cutthroat trout in western United States. The species is managed under the recovery plan and is monitored annually for population abundance.
 - ◆ Determination: The fish (population) is not an outstandingly remarkable value. This species is also found in several other creeks in the inventory and within the region of comparison. Therefore, it is not unique and not considered outstandingly remarkable.

Summary: Cow Creek is ineligible because it has no outstandingly remarkable values.

Crown Creek (GIS Number 3.61)

Location

- Ranger District: High Sierra

- County: Fresno
- Beginning Point: Headwaters east of Crown Basin, west of Kettle Ridge
- End Point: Forest boundary with Kings Canyon National Park
- Special Area: John Muir Wilderness

Mileage

- Studied: 10.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Crown Creek is ineligible because it has no outstandingly remarkable values.

Dike Creek (GIS Number 3.67)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters unnamed lake in the Ritter Range
- End Point: North Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 3.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.

- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Dike Creek is ineligible because it has no outstandingly remarkable values.

Dinkey Creek (GIS Number 3.68.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at Island Lake
- End Point: Upper waterfalls north of Dinkey Creek Roof Pendent Geological Area
- Special Area: 3.5 miles is in Dinkey Lakes Wilderness

Mileage

- Studied: 4.0
- Eligible: 4.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Spectacular views of granite domes and lakes.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of steep granitic domes and lakes, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Popular day hiking trail follows the creek from the trailhead to Island Lake. Six miles of trails provide a loop experience for visitors to access four lakes in the Dinkey Lakes Wilderness.
 - ◆ Determination: Recreation is not an outstandingly remarkable value.
- **Geology**
 - ◆ Description: Glaciated landscape. The Dinkey Creek Roof Pendant Geological Area is a series of rocks that have been folded three different ways. The Pendant includes schist, quartzite, hornfelds, calc-silicate rocks, and marble. These rocks are thought to have been originally deposited sometime between the Paleozoic and the Cretaceous Period of the Mesozoic in a shallow marine area. The age range would be anywhere between 524 to 146 million years ago.

- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Dinkey Creek (GIS Number 3.68.1) is ineligible because it has no outstandingly remarkable values.

Dinkey Creek (GIS Number 3.68.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Upper waterfalls north of Dinkey Creek Roof Pendent Geological Area
- End Point: Waterfalls south of Dinkey Creek Roof Pendent Geological Area
- Special Area: Dinkey Creek Roof Pendent Geological Area

Mileage

- Studied: 0.7
- Eligible: 0.7

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Views of granite-walled river canyons interspersed with patches of forested areas as well as lakes and domes, including Dinkey Dome.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of steep granitic walls, domes, deep canyons, and lakes, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Access by roads and motorized trails. The creek is crossed by Swamp Motorized Trail. Just east of the creek crossing is an example of the Dinkey Creek Roof Pendant Geological Area.
 - ◆ Determination: Recreation is an outstandingly remarkable value.
- **Geology**
 - ◆ Description: Glaciated landscape. The Dinkey Creek Roof Pendant Geological Area is a series of rocks that have been folded three different ways. The Pendant includes schist, quartzite, hornfelds, calc-silicate rocks, and marble. These rocks are thought to have been originally deposited sometime between the Paleozoic and the Cretaceous

Period of the Mesozoic in a shallow marine area. The age range would be anywhere between 524 to 146 million years ago.

- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Dinkey Creek (GIS Number 3.68.2) is eligible because recreation is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: No development

Accessibility: Motorized and nonmotorized trails

Water Quality: Unknown

Classification: Recreational

Dinkey Creek (GIS Number 3.68.3)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Waterfalls south of Dinkey Creek Roof Pendent Geological Area
- End Point: Confluence Rock Creek
- Special Area: 0.25 miles is in Dinkey Creek Roof Pendent Geological Area

Mileage

- Studied: 6.9
- Eligible: 6.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Includes 3.22 miles within Variety Class A (Distinctive). Barren granite-walled river canyons and Dinkey Dome.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of steep granitic walled river canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ♦ Description: A small number of visitors hike cross country to access geological formations along the creek.
- ♦ Determination: Recreation is not an outstandingly remarkable value.

- **Geology**

- ♦ Description: Glacially scoured valley down to Arkansas Creek.
- ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Dinkey Creek (GIS Number 3.68.3) is ineligible because it has no outstandingly remarkable values.

Dinkey Creek (GIS Number 3.68.4)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence Rock Creek
- End Point: South of the gauging station and north of Strawberry Meadow
- Special Area: 0.25 miles is in Dinkey Creek Roof Pendent Geological Area

Mileage

- Studied: 4.0
- Eligible: 4.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ♦ Description: 1.85 miles within Variety Class A. Views of granite domes and lakes and historical structures.
- ♦ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of steep granitic domes and lakes, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ♦ Description: Dinkey Creek is a popular recreation destination that offers camping, picnicking, fishing, water play, horse riding, organization camps, rental cabins, and recreation residences.

- ◆ Determination: Recreation is not an outstandingly remarkable value.
- **Geology**
 - ◆ Description: Upper reach glaciated down to Glen Meadow Creek Quaternary Glaciated Deposits, lateral moraines.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **History**
 - ◆ Description: Dinkey Creek Bridge listed on the National Register of Historic Places.
 - ◆ Determination: History is an outstandingly remarkable value.
- **Prehistory**
 - ◆ Description: Archaic and Late Prehistoric period prehistoric and ethnographic Mono Indian trails and villages.
 - ◆ Determination: Prehistory is an outstandingly remarkable value.

Summary: Dinkey Creek (GIS Number 3.68.4) is eligible because history and prehistory are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: Yes

Accessibility: Roads and nonmotorized trails

Water Quality: Unknown

Classification: Recreational

Dusy Creek (GIS Number 3.73)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Thompson Lake
- End Point: Courtright Reservoir
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: Parallels the historic Dusy-Ershim OHV Route for entire length. This motorized trail is nationally known, draws visitors from across the country, and provides OHV access for camping and fishing.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Although the Dusy-Ershim OHV Route is nationally known, it is known for OHV access, and not specifically related to Dusy Creek. Therefore, Dusy Creek recreation is not considered outstandingly remarkable.

- **History**

- ◆ Description: The Dusy-Ershim OHV Route is an historic trail.
- ◆ Determination: Although the OHV Route parallels the creek, the historic value of the OHV Route is not specifically related to Dusy Creek. Therefore, history is not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Clovis Culture has been discovered in this area with documentation that wooly mammoths were hunted in this area.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Although wooly mammoth hunting has been documented within the segment, similar prehistoric sites exist elsewhere within the region of comparison. Therefore, this area is not unique and not considered outstandingly remarkable.

Summary: Dusy Creek is ineligible because it has no outstandingly remarkable values.

East Fork Bear Creek (GIS Number 3.76)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Black Bear Lake
- End Point: Bear Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 4.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Views of lakes, granitic walls, and waterfalls.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of lakes, granitic walls, and waterfalls, similar views are relatively common in the high country and also exist elsewhere within the region of comparison. Therefore, scenery is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: East Fork Bear Creek is ineligible because it has no outstandingly remarkable values.

East Fork Big Creek (GIS Number 3.77.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters west of Dutch Oven Meadow
- End Point: Confluence unnamed stream northeast Rock House Meadow
- Special Area: John Muir Wilderness

Mileage

- Studied: 1.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated Landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Hiking and horse riding in a primitive setting.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Similar opportunities for hiking and horse riding are common within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.

- **Wildlife (Population)**

- ◆ Description: Above 6,000 feet and includes habitat for listed amphibians.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value.

Summary: East Fork Big Creek (GIS Number 3.77.1) is ineligible because it has no outstandingly remarkable values.

East Fork Big Creek (GIS Number 3.77.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence unnamed stream northeast Rock House Meadow
- End Point: Confluence with South Fork Big Creek
- Special Areas: John Muir Wilderness, Dinkey Lakes Wilderness

Mileage

- Studied: 3.0
- Eligible: 3.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Dusy-Ershim is a motorized trail that is nationally known, draws visitors from across the country, and provides OHV access for camping and fishing.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Although the Dusy-Ershim OHV Route is nationally known, it is known for OHV access, and not

specifically related to East Fork Big Creek. Therefore, East Fork Big Creek recreation is not considered outstandingly remarkable.

- **Wildlife (Population)**

- ◆ Description: The segment is occupied by large populations of threatened Yosemite Toad, closely associated with the creek. Yosemite toads are most frequently associated with wet meadows, so these populations exist in a unique situation. Habitat occupancy along the creek may enable population expansion and genetic diversity increases due to the possibility of movement along the watercourse and the existence of other populations nearby and also connected by creeks. The segment includes the southernmost and largest known populations of Yosemite toad on the Sierra National Forest.
- ◆ Determination: The wildlife (population) is unique and is an outstandingly remarkable value.

Summary: East Fork Big Creek (GIS Number 3.77.2) is eligible because wildlife (population) is an outstanding remarkable value.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: No development

Accessibility: Primitive road, nonmotorized trails

Water Quality: Unknown

Classification: Scenic

East Fork Cargyle Creek (GIS Number 3.79)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters south of Iron Lake
- End Point: Cargyle Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: East Fork Cargyle Creek is ineligible because it has no outstandingly remarkable values.

East Fork Granite Creek (GIS Number 3.83)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters north of McClure and Sadler Lakes
- End Point: Confluence of Granite Creek and West Fork Granite Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 11.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: East Fork Granite Creek is ineligible because it has no outstandingly remarkable values.

East Pinnacles Creek (GIS Number 3.85)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at Aweetasal Lake

- End Point: Piute Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, significant and unique glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: East Pinnacles Creek is ineligible because it has no outstandingly remarkable values.

Fall Creek (GIS Number 3.90)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Mount Hutton
- End Point: North Fork Kings River
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere

within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Fall Creek is ineligible because it has no outstandingly remarkable values.

Fernandez Creek (GIS Number 3.92)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters unnamed lake north of Ruth Lake
- End Point: West Fork Granite Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 1.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Fernandez Creek is ineligible because it has no outstandingly remarkable values.

Fish Creek (GIS Number 3.96.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Red and White Lake on the Sierra managed by the Inyo National Forest
- End Point: Confluence with Minnow Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 8.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Fish Creek (3.96.1) is ineligible because it has no outstandingly remarkable values.

Fish Creek (GIS Number 3.96.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence with Minnow Creek
- End Point: Middle Fork San Joaquin River
- Special Areas: John Muir Wilderness, Ansel Adams Wilderness

Mileage

- Studied: 11.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Fish Creek (GIS Number 3.96.2) is ineligible because it has no outstandingly remarkable values.

Fleming Creek (GIS Number 3.97.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Fleming Lake
- End Point: Confluence unnamed creek, west of Devils Punch Bowl
- Special Area: John Muir Wildernesses

Mileage

- Studied: 4.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Fleming Creek (GIS Number 3.97.1) is ineligible because it has no outstandingly remarkable values.

Fleming Creek (GIS Number 3.97.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence unnamed creek, west of Devils Punch Bowl
- End Point: North Fork Kings River
- Special Area: John Muir Wildernesses

Mileage

- Studied: 3.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated Landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Fleming Creek (GIS Number 3.97.2) is ineligible because it has no outstandingly remarkable values.

French Canyon (GIS Number 3.101)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters French Lake
- End Point: Piute Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: French Canyon is ineligible because it has no outstandingly remarkable values.

Glen Meadow Creek (GIS Number 3.104.2)

Location

- Ranger District: High Sierra
- County: Fresno

- Beginning Point: 0.1 miles east of the Glen Meadow work center
- End Point: Dinkey Creek
- Special Area: None

Mileage

- Studied: 2.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **History**
 - ◆ Description: Historic vernacular landscape associated with early 20th century Forest Service use. Historic buildings constructed and used by the Forest Service (Pine Logging Camp and Dinkey Ranger Station complex).
 - ◆ Determination: History is not an outstandingly remarkable value. Other similar historic sites (logging camps and ranger stations) also exist elsewhere within the region of comparison. Therefore, these sites are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Prehistoric archaeological district.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Glen Meadow Creek is ineligible because it has no outstandingly remarkable values.

Golden Creek (GIS Number 3.105)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Summit Lake
- End Point: Mono Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Traditional cultural property.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: Golden Creek is ineligible because it has no outstandingly remarkable values.

Granite Creek (GIS Numbers 3.107.1, 3.107.2, 3.107.3)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Confluence of the East Fork Granite Creek and West Fork Granite Creek near the Granite Creek campground
- End Point: Confluence of the San Joaquin River, 0.8 miles northeast of Balloon Dome
- Special Area: From the confluence with Miller Creek to the San Joaquin River, Granite Creek is in the Ansel Adams Wilderness

Mileage

- Studied: 7.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, bedrock controlled coming into San Joaquin River.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere

within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: The mid-reach of Granite Creek contains a Late Archaic period prehistoric trans-Sierra economic exchange corridor.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Granite Creek is ineligible because it has no outstandingly remarkable values.

Helms Creek (GIS Number 3.112.3)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Downstream of the dam for Courtright Reservoir
- End Point: North Fork Kings River
- Special Area: None

Mileage

- Studied: 2.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Variety Class A (Distinctive). Steep, barren granite-walled canyons with knife-edged ridges, a unique granite-walled canyon.
- ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are views of steep granite canyons with knife-edged ridges, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: The creek drops through a glacier carved canyon and is offers class V whitewater kayaking opportunities during normal flows of 40 cubic feet per second. There are also hiking and nature viewing opportunities in the canyon. A trail and stairway near the dam provide access to the gauging station.

- ◆ Determination: Recreation is not an outstandingly remarkable value. Although the setting is beautiful, similar opportunities for class V whitewater kayaking and hiking also exist elsewhere within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Glaciated landscape.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Helms Creek is ineligible because it has no outstandingly remarkable values.

Hilgard Branch (GIS Number 3.114)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Lake Italy
- End Point: Bear Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 7.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Hilgard Branch is ineligible because it has no outstandingly remarkable values.

Hooper Creek (GIS Number 3.118)

Location

- Ranger District: High Sierra

- County: Fresno
- Beginning Point: Headwaters northwest of Mount Hooper
- End Point: South Fork San Joaquin River
- Special Area: John Muir Wilderness

Mileage

- Studied: 4.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacial moraines, glacial lakes (tarns), high alpine glaciated valley, including cirque basin.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Hooper Creek is ineligible because it has no outstandingly remarkable values.

Hopkins Creek (GIS Number 3.119)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Upper Hopkins Lakes
- End Point: Mono Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.7
- Eligible: 3.7

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.

- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Traditional cultural property and a cultural landscape.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.
- **Wildlife (Population)**
 - ◆ Description: The segment is occupied by large populations of endangered Sierra Nevada yellow-legged frog throughout most of the creek. Habitat occupancy along the creek may enable population expansion and genetic diversity increases due to the possibility of movement along the watercourse and the existence of other populations nearby and also connected by creeks.
 - ◆ Determination: The wildlife (population) is an outstandingly remarkable value.

Summary: Hopkins Creek is eligible because wildlife (population) is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: No development

Accessibility: Nonmotorized trails

Water Quality: Unknown

Classification: Wild

Horse Creek (GIS Number 3.120)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters north of Woodchuck Pass
- End Point: Crown Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 6.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated Landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Horse Creek is ineligible because it has no outstandingly remarkable values.

Iron Creek (GIS Number 3.126.1)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters at Iron Lakes
- End Point: Confluence of unnamed creek from Hoggen Lake
- Special Area: None

Mileage

- Studied: 2.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Connects to Iron Lakes, Junction Lake, Bare Island, and Hoggem Lake. These water forms and the sheer granitic walls are special visual features.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of lakes and sheer granitic walls, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

Summary: Iron Creek (GIS Number 3.126.1) is ineligible because it has no outstandingly remarkable values.

Iron Creek (GIS Number 3.126.2)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Confluence of unnamed creek from Hoggen Lake
- End Point: South Fork Merced River
- Special Area: None

Mileage

- Studied: 2.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Scenery is similar to the South Fork Merced Wild and Scenic River and the segment connects Iron Lake to the South Fork Merced Wild and Scenic River.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views similar to the South Fork Merced Wild and Scenic River, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

Summary: Iron Creek (GIS Number 3.126.2) is ineligible because it has no outstandingly remarkable values.

Iron Creek (GIS Number 3.128)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters at Iron Lake west of Iron Mountain east of boundary between the Sierra National Forest and Inyo National Forest
- End Point: North Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 3.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Iron Creek (GIS Number 3.128) is ineligible because it has no outstandingly remarkable values.

Jackass Creek (GIS Number 3.130.2)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Jackass Meadow
- End Point: Mammoth Pool
- Special Area: None

Mileage

- Studied: 13.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Intermediate Period prehistoric trail now called the French Trail.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric trail within the segment, similar prehistoric trails also exist elsewhere within the region of comparison. Therefore, the trail is not unique and not considered outstandingly remarkable.

Summary: Jackass Creek is ineligible because it has no outstandingly remarkable values.

Jose Creek (GIS Number 3.133.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence of Jose Creek and Musick Creek
- End Point: Confluence of the San Joaquin River and Jose Creek at Powerhouse 3
- Special Area: Critical Aquatic Refuge

Mileage

- Studied: 4.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Ethnographic landscape for the Nim and Poshgisha Mono people eligible for National Register of Historic Places listing.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.
- **Wildlife (Population)**
 - ◆ Description: The Jose Creek basin supports the only known population of foothill yellow-legged frogs within the Sierra National Forest, and is one of only a handful of populations in the Southern Sierra Nevada Mountain Range. Foothill yellow-legged frogs are listed as sensitive by the US Forest Service. The frog population is within 1/4 mile of Jose Creek, and owes its existence to Jose Creek.
 - ◆ Determination: The wildlife (population) is unique and is an outstandingly remarkable value.

Summary: Jose Creek is eligible because wildlife (population) is an outstanding remarkable value.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: No development

Accessibility: Roads

Water Quality: Unknown

Classification: Recreational

Kaiser Creek (GIS Number 3.134.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Lower Twin Lakes
- End Point: Kaiser Creek at trail 26E30
- Special Area: Less than 0.5 miles is in Kaiser Wilderness

Mileage

- Studied: 2.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Significant carbonate and glaciated landscape.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Kaiser Creek is ineligible because it has no outstandingly remarkable values.

Lakecamp Creek (GIS Number 3.135)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Mt. Givens, East of Dusy-Ershim
- End Point: Big Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population)**

- ◆ Description: Endangered Sierra Nevada yellow-legged frog.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Lakecamp Creek is ineligible because it has no outstandingly remarkable values.

Laurel Creek (GIS Number 3.137)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters west of Finch Lake
- End Point: Mono Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 4.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Significant glaciated landscape and high alpine glacial landforms including tarns.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Traditional cultural property, cultural landscape.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Laurel Creek is ineligible because it has no outstandingly remarkable values.

Lewis Fork (GIS Number 3.139.2)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Forest boundary at Sugar Pine private property
- End Point: Forest boundary at Cedar Valley private property
- Special Area: None

Mileage

- Studied: 4.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**
 - ◆ Description: The Lewis Creek National Recreation Trail is a high use hiking trail with access to waterfalls.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Similar opportunities for hiking with access to waterfalls are common within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.
- **History**
 - ◆ Description: Chukchansi cultural property associated with the mid to late-19th century diaspora of Native Californians.
 - ◆ Determination: History is not an outstandingly remarkable value. Although there are historic sites within the segment, similar historic sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Lewis Fork is ineligible because it has no outstandingly remarkable values.

Little Fine Gold Creek (GIS Number 3.141)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters are east of Teaford Saddle
- End Point: Forest boundary, 1.27 miles southwest of Goat Mountain Fire Lookout
- Special Area: None

Mileage

- Studied: 3.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Ethnographic Mono Hamlet.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: Little Fine Gold Creek is ineligible because it has no outstandingly remarkable values.

Long Canyon (GIS Number 3.145)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Scarab Lake
- End Point: Fish Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Long Canyon is ineligible because it has no outstandingly remarkable values.

Long Creek (GIS Number 3.146)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters Rockbound Lake
- End Point: North Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 4.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Long Creek is ineligible because it has no outstandingly remarkable values.

Madera Creek (GIS Number 3.154)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters Madera Lakes
- End Point: West Fork Granite Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 4.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Madera Creek is ineligible because it has no outstandingly remarkable values.

Meadow Brook (GIS Number 3.157)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at Cold Springs
- End Point: North Fork Kings River
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Meadow Brook is ineligible because it has no outstandingly remarkable values.

Mills Creek (GIS Number 3.164)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Upper Mills Creek Lake
- End Point: Mono Creek

- Special Area: John Muir Wilderness

Mileage

- Studied: 6.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Traditional cultural property and a cultural landscape.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.
- **Wildlife (Population)**
 - ◆ Description: Endangered Sierra Nevada yellow-legged frog.
 - ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Mills Creek is ineligible because it has no outstandingly remarkable values.

Minnow Creek (GIS Number 3.165)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at Minnie Lake
- End Point: Fish Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Minnow Creek is ineligible because it has no outstandingly remarkable values.

Mono Creek (GIS Number 3.166.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at Pioneer Basin Lakes
- End Point: 0.5 miles north of Mono Rock and 0.5 miles from the confluence of Golden and Fourth Recess Lakes
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.5
- Eligible: 3.5

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Mono Recesses/peaks and granite-walled river canyons are visual features of the Sierra Crest.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of peaks and granite-walled river canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Pioneer Basin Lakes provide camping opportunities in the John Muir Wilderness.
- ◆ Determination: Recreation is not an outstandingly remarkable value.

- **Geology**

- ◆ Description: Glaciated landscape, glacial moraines, glacial lakes.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Mono Trail Traditional Cultural Property from Mammoth area on the Inyo National Forest to the Mono Hot Springs Area is eligible for National Register of Historic Places listing.
- ◆ Determination: Prehistory is an outstandingly remarkable value. The Mono Trail Traditional Cultural Property is unique on the Sierra National Forest.

- **Wildlife (Population)**

- ◆ Description: Endangered Sierra Nevada yellow-legged frog.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Mono Creek (GIS Number 3.166.1) is eligible because prehistory is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: No development

Accessibility: Nonmotorized trail

Water Quality: Unknown

Classification: Wild

Mono Creek (GIS Number 3.166.2)

Location

- Ranger District: High Sierra
- County: Fresno

- Beginning Point: 0.5 miles north of Mono Rock and 0.5 miles from the confluence of Golden and Fourth Recess Lakes
- End Point: Lake Thomas A. Edison (Reservoir)
- Special Area: John Muir Wilderness

Mileage

- Studied: 9.9
- Eligible: 9.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Mono Recesses/peaks and granite-walled river canyons are visual features of the Sierra Crest.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of peaks and granite-walled river canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Hiking trail along the segment through deep glacial hanging valleys and extensive riparian areas with large aspen stands, with views of granite domes.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Although there are deep glacial hanging valleys and extensive riparian areas with large aspen stands, with views of granite domes, other similar areas exist elsewhere within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Glaciated landscape, glacial moraines, u-shaped valley, hanging valleys.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Mono Trail Traditional Cultural Property from Mammoth area on the Inyo National Forest to the Mono Hot Springs Area is eligible for National Register of Historic Places listing.
 - ◆ Determination: Prehistory is an outstandingly remarkable value. The Mono Trail Traditional Cultural Property is unique on the Sierra National Forest.

- **Wildlife (Population)**

- ◆ Description: Endangered Sierra Nevada yellow-legged frog.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Mono Creek (GIS Number 3.166.2) is eligible because prehistory is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: No development

Accessibility: Nonmotorized trails

Water Quality: Unknown

Classification: Wild

Mono Creek (GIS Number 3.166.4)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: 0.66 miles southwest of Vermillion Valley Dam on Lake Thomas A. Edison (Reservoir)
- End Point: South Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 6.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: Hiking trails provide access to the segment.
- ◆ Determination: Recreation is not an outstandingly remarkable value.

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Mono Creek (GIS Number 3.166.4) is ineligible because it has no outstandingly remarkable values.

Mule Creek (GIS Number 3.169)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters east side of the Kings River Geological Area
- End Point: North Fork Kings River
- Special Area: None

Mileage

- Studied: 2.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Carbonate, glaciated landscape, caves within Kings River Geological Area.
- ◆ Determination: The Kings Cavern Geological Area includes three cave systems and is the most extensive and well-preserved cavern on the Sierra National Forest. Other more extensive, notable and developed cave systems exist elsewhere within the region of comparison. Sequoia and Kings Canyon National Parks contain half of the total number of caves more than a mile long that exist in California, as well as the longest cave in California, numerous karst streams, and some of the best alpine karst topography in the United States. Therefore, Kings Cavern Geological Area is not unique and geology is not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Aboriginal cultural site.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within

the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: Mule Creek is ineligible because it has no outstandingly remarkable values.

Nelder Creek (GIS Number 3.173.2)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Northern boundary Nelder Grove Historic Area
- End Point: Southwest boundary Nelder Grove Historic Area
- Special Area: Nelder Grove Historical Area

Mileage

- Studied: 1.9
- Eligible: 1.9

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: There are Giant Sequoias along the creek, within the Nelder Grove Historic Area, that are accessible via the Nelder Grove National Recreation Trail.
 - ◆ Determination: Scenery is an outstandingly remarkable value. The Giant Sequoias are unique and exemplary scenic values.
- **Recreation**
 - ◆ Description: The Nelder Grove Historic Area contains hiking trails through a unique landscape for nature viewing.
 - ◆ Determination: Recreation is an outstandingly remarkable value.
- **Botany**
 - ◆ Description: There are Giant Sequoias along the creek, within the Nelder Grove Historic Area. Near the creek, there are also two populations of western waterfan lichen (*Peltigera gowardii*) and eight populations of the mountain lady's slipper orchid (*Cypripedium montanum*), a Forest sensitive species.
 - ◆ Determination: Botany is an outstandingly remarkable value. Giant Sequoias are rare and only occur in the southern sierras. Lady's slipper orchids are also rare.

Summary: Nelder Creek is eligible because scenery, recreation, and botany are outstandingly remarkable values.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: Trailhead facility with toilet building

Accessibility: Roads and nonmotorized trails

Water Quality: Unknown

Classification: Recreational

Nelson Creek (GIS Number 3.174)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters northeast of Nelson Mountain
- End Point: Courtright Reservoir
- Special Area: Dinkey Lakes Wilderness

Mileage

- Studied: 4.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population)**
 - ◆ Description: Endangered Sierra Nevada yellow-legged frog.
 - ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Nelson Creek is in eligible because it has no outstandingly remarkable values.

North Fork Kings River (GIS Number 3.177.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters north of Battalion Lake
- End Point: Confluence of unnamed creek south of Blackcap Basin

- Special Area: John Muir Wilderness

Mileage

- Studied: 2.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Views of the Sierra crest, knife-edged granite ridges.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of knife-edged granite ridges, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Wilderness hiking.
 - ◆ Determination: Recreation is not an outstandingly remarkable value.
- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, significant and unique glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: North Fork Kings River (GIS Number 3.177.1) is ineligible because it has no outstandingly remarkable values.

North Fork Kings River (GIS Number 3.177.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence of unnamed creek south of Blackcap Basin
- End Point: Wishon Reservoir
- Special Area: John Muir Wilderness

Mileage

- Studied: 15.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Variety Class A (Distinctive). Barren, granite-walled river canyons interspersed with patches of forested areas. There is one section where granite-walled river canyons are prominent.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of barren, granite-walled canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Wilderness hiking.
 - ◆ Determination: Recreation is not an outstandingly remarkable value.
- **Geology**
 - ◆ Description: Glaciated landscape.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: North Fork Kings River (GIS Number 3.177.2) is ineligible because it has no outstandingly remarkable values.

North Fork Kings River (GIS Number 3.177.4)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Just below the dam of Wishon Reservoir
- End Point: Black Rock Reservoir
- Special Area: None

Mileage

- Studied: 7.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: 4.23 miles within the segment are Variety Class A (Distinctive). Barren, granite-walled river canyons interspersed with patches of forested areas. There is one section where granite-walled river canyons are prominent.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of barren, granite-walled canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Granite Gorge provides excellent views of waterfall that drop over 100 feet. Some visitors hike cross-country and climb to the large boulders at the bottom of the Granite Gorge. Opportunities for canyoneering in a deep gorge.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Although there are hiking, climbing, canyoneering, and waterfall viewing opportunities, other similar areas exist elsewhere within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Glaciated landscape.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: North Fork Kings River (GIS Number 3.177.4) is ineligible because it has no outstandingly remarkable values.

North Fork Kings River (GIS Number 3.177.6)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Just below the dam of Black Rock Reservoir
- End Point: Reservoir at Balch Powerplant
- Special Area: None

Mileage

- Studied: 4.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: Whitewater kayaking. Canyoneering between the confluence of Weir Creek and Balch Camp Powerhouse, Upper and Lower Jump Canyons.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Although there are whitewater kayaking and canyoneering opportunities, other similar areas exist elsewhere within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.

Summary: North Fork Kings River (GIS Number 3.177.6) is ineligible because it has no outstandingly remarkable values.

North Fork Kings River (GIS Number 3.177.8)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Just below the dam of Balch Powerplant
- End Point: Kings River
- Special Area: None

Mileage

- Studied: 4.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Carbonate, glaciated landscape.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Wildlife (Population)**

- ◆ Description: Endangered Sierra Nevada yellow-legged frog.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands.

There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

- **Prehistory**

- ♦ Description: Holkoma Mono ethnographic village.
- ♦ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: North Fork Kings River (GIS Number 3.177.8) is ineligible because it has no outstandingly remarkable values.

North Fork Mono Creek (GIS Number 3.178)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Bighorn Lake
- End Point: Mono Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Prehistory**

- ♦ Description: Mono Trail Traditional Cultural Property.
- ♦ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within

the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

- **Wildlife (Population)**

- ♦ Description: Endangered Sierra Nevada yellow-legged frog.
- ♦ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: North Fork Mono Creek is ineligible because it has no outstandingly remarkable values.

Nutmeg Creek (GIS Number 3.185.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Haslett Basin - where the creek leaves private property and enters Sierra National Forest
- End Point: Big Creek
- Special Area: None

Mileage

- Studied: 1.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**

- ♦ Description: Traditional cultural landscape for the Holkoma Mono people.
- ♦ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Nutmeg Creek is ineligible because it has no outstandingly remarkable values.

Owl Creek (GIS Number 3.190)

Location

- Ranger District: Bass Lake

- County: Madera
- Beginning Point: Headwaters Whiskey Ridge east of Whiskey Falls Campground
- End Point: Whiskey Creek
- Special Area: None

Mileage

- Studied: 2.3
- Eligible: 2.3

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Botany**
 - ◆ Description: Rawson's flaming trumpet (*Collomia rawsoniana*) occurs along the creek. Brook pocket moss (*Fissidens aphelotaxifolius*) and western waterfan lichen are in the creek. The brook pocket moss location is one of only two in California.
 - ◆ Determination: Botany is an outstandingly remarkable value.

Summary: Owl Creek is determined to be eligible because botany is an outstandingly remarkable value.

Preliminary Classification

Water Resources Development: Free of impoundment

Shoreline Development: No development

Accessibility: Roads

Water Quality: Unknown

Classification: Recreational

Pitman Creek (GIS Number 3.198)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence of Tamarack Creek and South Fork Tamarack Creek
- End Point: Big Creek
- Special Area: None

Mileage

- Studied: 2.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Contains ethnographic trails.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Pitman Creek is ineligible because it has no outstandingly remarkable values.

Piute Creek (GIS Number 3.199.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at Humphreys Lake
- End Point: Confluence of unknown creek from Muriel Lake
- Special Area: John Muir Wilderness

Mileage

- Studied: 2.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Views of the Sierra crest, knife-edged granite ridges.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of knife-edged granite ridges, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, lacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Wildlife (Population)**

- ◆ Description: Endangered Sierra Nevada yellow-legged frog.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Piute Creek (GIS Number 3.199.1) is ineligible because it has no outstandingly remarkable values.

Piute Creek (GIS Number 3.199.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence of unknown creek from Muriel Lake
- End Point: Kings Canyon National Park boundary
- Special Area: John Muir Wilderness

Mileage

- Studied: 11.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Views of knife-edged granite ridges. Headwaters in scenic alpine basin, upper portion flows in rough rocky, heavily glaciated gorge, gradient decreases downstream. Granite outcroppings, boulders, and bare rock dominate scenery with timber and alpine meadows interspersed. Access by trail.
- ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere

within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Wildlife (Population)**

- ◆ Description: Endangered Sierra Nevada yellow-legged frog.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Piute Creek (GIS Number 3.199.2) is ineligible because it has no outstandingly remarkable values.

Piute Creek (GIS Number 3.199.3)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Kings Canyon National Park boundary
- End Point: South Fork San Joaquin River
- Special Area: John Muir Wilderness

Mileage

- Studied: 0.06
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Wildlife (Population)**

- ◆ Description: Endangered Sierra Nevada yellow-legged frog.
- ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely

abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Piute Creek (GIS Number 3.199.3) is ineligible because it has no outstandingly remarkable values.

Post Corral Creek (GIS Number 3.202.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters north of Red Rock Basin
- End Point: Confluence of Burnt Corral Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Post Corral Creek (GIS Number 3.202.1) is ineligible because it has no outstandingly remarkable values.

Post Corral Creek (GIS Number 3.202.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence of Burnt Corral Creek
- End Point: North Fork Kings River
- Special Area: John Muir Wilderness

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Post Corral Creek (GIS Number 3.202.2) is ineligible because it has no outstandingly remarkable values.

Post Creek (GIS Number 3.203)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters Post Lakes
- End Point: West Fork Granite Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Post Creek is ineligible because it has no outstandingly remarkable values.

Providence Creek (GIS Number 3.205)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters west of Forked Meadow
- End Point: Big Creek
- Special Area: None

Mileage

- Studied: 2.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Clovis Culture has been discovered in this area.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Providence Creek is ineligible because it has no outstandingly remarkable values.

Rancheria Creek (GIS Number 3.207)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters north of Spanish Lakes
- End Point: North Fork Kings River
- Special Area: None

Mileage

- Studied: 8.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: Spectacular waterfall into Granite Gorge. Opportunities for viewing scenery and nature photography.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Although there are opportunities for nature photography and scenery viewing, including a waterfall, other similar areas exist elsewhere within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.

Summary: Rancheria Creek (GIS Number 3.207) is ineligible because it has no outstandingly remarkable values.

Rancheria Creek (GIS Number 3.208)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters east of Idaho Lake
- End Point: Huntington Lake
- Special Area: None

Mileage

- Studied: 5.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Recreation**

- ◆ Description: On the lower portion of the creek, spectacular view of a waterfall at the end of Rancheria Falls National Recreation Trail. Trail is designed to accommodate various abilities. Opportunities for viewing scenery and nature photography.
- ◆ Determination: Recreation is not an outstandingly remarkable value. Although there are opportunities for hiking and scenery viewing, including a waterfall, other similar areas exist elsewhere within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.

Summary: Rancheria Creek (GIS Number 3.208) is ineligible because it has no outstandingly remarkable values.

Rock Creek (GIS Number 3.215.1)

Location

- Ranger District: High Sierra
- County: Fresno

- Beginning Point: Headwaters Cutts Meadow
- End Point: Confluence of unnamed creek west of Bald Mountain
- Special Area: None

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population)**
 - ◆ Description: Endangered Sierra Nevada yellow-legged frog.
 - ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Rock Creek (GIS Number 3.215.1) is ineligible because it has no outstandingly remarkable values.

Rock Creek (GIS Number 3.217)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters Rock Creek Lake
- End Point: San Joaquin River
- Special Area: None

Mileage

- Studied: 6.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.

- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Rock Creek (GIS Number 3.217) is ineligible because it has no outstandingly remarkable values.

Rodgers Creek (GIS Number 3.218)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters at Geraldine lakes east of Spanish Mountain
- End Point: Kings Canyon National Park boundary, where Rodgers Creek meets Crown Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 5.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable. Summary: Rodgers Creek is ineligible because it has no outstandingly remarkable values.

Summary: Rodgers Creek (GIS Number 3.218) is ineligible because it has no outstandingly remarkable values.

Rough Creek (GIS Number 3.322)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Rogers Ridge, east of Garlic Meadow
- End Point: Kings River

- Special Area: Kings River Special Management Area

Mileage

- Studied: 5.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Wildlife (Population)**
 - ◆ Description: Endangered Sierra Nevada yellow-legged frog.
 - ◆ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Rough Creek is ineligible because it has no outstandingly remarkable values.

Rube Creek (GIS Number 3.224.1)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters north of Rube Meadow
- End Point: Confluence with unnamed creek near Heitz Meadow
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated Landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere

within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Rube Creek (GIS Number 3.224.1) is ineligible because it has no outstandingly remarkable values.

Rube Creek (GIS Number 3.224.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence with unnamed creek near Heitz Meadow
- End Point: South Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 1.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated Landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Rube Creek (GIS Number 3.224.2) is ineligible because it has no outstandingly remarkable values.

Rush Creek (GIS Number 3.226.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: South of Burrough Mountain and east of Bob's Flat.
- End Point: Big Creek
- Special Area: None

Mileage

- Studied: 2.1

- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Protohistoric period village.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: Rush Creek is ineligible because it has no outstandingly remarkable values.

Sallie Keyes Creek (GIS Number 3.231)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters unnamed lake southeast of Mt. Hooper
- End Point: South Fork San Joaquin River
- Special Area: John Muir Wilderness

Mileage

- Studied: 4.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Sallie Keyes Creek is ineligible because it has no outstandingly remarkable values.

San Joaquin River (GIS Number 3.233.1)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Hells Half Acre
- End Point: Mammoth Pool Reservoir
- Special Area: None

Mileage

- Studied: 1.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Variety Class A. Steep granitic walls, domes, and deep canyons.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of granitic walls, domes, and deep canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Hiking, viewing scenery.
 - ◆ Determination: Recreation is not an outstandingly remarkable value.

Summary: San Joaquin River (GIS Number 3.233.1) is ineligible because it has no outstandingly remarkable values.

San Joaquin River (GIS Number 3.233.3)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Mammoth Pool Dam
- End Point: Mammoth Pool Powerhouse
- Special Area: None

Mileage

- Studied: 8.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Variety Class A. Steep granitic walls, domes, and deep canyons.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of granitic walls, domes, and deep canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Recreation**
 - ◆ Description: Class VI-V whitewater, fishing, deep canyon with limited access. Rock Creek and Fish Creek have multiple falls dropping into the canyon and offer scenic views.
 - ◆ Determination: Recreation is not an outstandingly remarkable value. Although there are opportunities for whitewater recreation, fishing, and scenery viewing, including a waterfall, other similar areas exist elsewhere within the region of comparison. Therefore, recreation is not considered outstandingly remarkable.

Summary: San Joaquin River (GIS Number 3.233.3) is ineligible because it has no outstandingly remarkable values.

San Joaquin River (GIS Number 3.233.4)

Location

- Ranger District: Bass Lake / High Sierra
- County: Madera, Fresno
- Beginning Point: Mammoth Pool Powerhouse
- End Point: Redinger Lake
- Special Area: None

Mileage

- Studied: 7.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Variety Class A. Steep granitic walls, domes, and deep canyons.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of granitic walls, domes, and deep canyons, similar views also exist

elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Hiking, viewing scenery.
- ◆ Determination: Recreation is not an outstandingly remarkable value.

Summary: San Joaquin River (GIS Number 3.233.4) is ineligible because it has no outstandingly remarkable values.

San Joaquin River (GIS Number 3.233.6)

Location

- Ranger District: Bass Lake / High Sierra
- County: Madera, Fresno
- Beginning Point: Redinger Lake Dam
- End Point: Kerckhoff Lake
- Special Area: None

Mileage

- Studied: 7.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Variety Class A. Steep granitic walls, domes, and deep canyons.
- ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of granitic walls, domes, and deep canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Recreation**

- ◆ Description: Hiking, viewing scenery.
- ◆ Determination: Recreation is not an outstandingly remarkable value.

Summary: San Joaquin River (GIS Number 3.233.6) is ineligible because it has no outstandingly remarkable values.

Scepter Creek (GIS Number 3.235)

Location

- Ranger District: High Sierra

- County: Fresno
- Beginning Point: Headwaters south of Scepter Pass; north of Scepter Lake
- End Point: Crown Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 7.2
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Wildlife (Population)**
 - ♦ Description: Endangered Sierra Nevada yellow-legged frog.
 - ♦ Determination: The wildlife (population) is not an outstandingly remarkable value. Historic accounts indicate that Sierra Nevada yellow-legged frogs were once extremely abundant across its range with some populations in the hundreds and even thousands. There are 48 known occupied locations distributed across the Sierra National Forest and this is not an exemplary population. Therefore, it is not considered outstandingly remarkable.

Summary: Scepter Creek is ineligible because it has no outstandingly remarkable values.

Senger Creek (GIS Number 3.236)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters northeast of Mount Senger
- End Point: Sallie Keyes Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 4.2

- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, lacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Senger Creek is ineligible because it has no outstandingly remarkable values.

Shakeflat Creek (GIS Number 3.237)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters southeast Shuteye Pass
- End Point: San Joaquin River near Shakeflat Trailhead
- Special Area: None

Mileage

- Studied: 3.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Prehistoric district.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Shakeflat Creek is ineligible because it has no outstandingly remarkable values.

Sharktooth Creek (GIS Number 3.238)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Sharktooth Lake
- End Point: Fish Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.
- **Fish (Population)**
 - ◆ Description: Paiute cutthroat trout population. This subspecies evolved from Lahontan cutthroat trout (*O. c. henshawi*) in Silver King Creek, below Llewellyn Falls. The separation of the subspecies is believed to have occurred following the desiccation of Lake Lahontan.
 - ◆ Determination: The fish (population) is not an outstandingly remarkable value. Paiute cutthroat trout are non-native and were introduced to this creek and are found in other locations within the region of comparison. They endemic to and protected within the Carson Ranger District of the Humboldt-Toiyabe National Forest. Therefore, it is not considered outstandingly remarkable.

Summary: Sharktooth Creek is ineligible because it has no outstandingly remarkable values.

Shirley Creek (GIS Number 3.241)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters Shirley Lake

- End Point: Madera Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 2.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Shirley Creek is ineligible because it has no outstandingly remarkable values.

Shuteye Creek (GIS Number 3.243)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters northeast Shuteye Peak
- End Point: West Fork Chiquito Creek
- Special Area: None

Mileage

- Studied: 2.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Aboriginal cultural site.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric site within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: Shuteye Creek is ineligible because it has no outstandingly remarkable values.

Silver Creek (GIS Number 3.244)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters west of the Gorge of Despair in Kings Canyon National Park
- End Point: Middle Fork Kings River at Little Tehipite Valley
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Silver Creek (GIS Number 3.244) is ineligible because it has no outstandingly remarkable values.

Silver Creek (GIS Number 3.245)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Big Margaret Lake
- End Point: Fish Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 9.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Silver Creek (GIS Number 3.245) is ineligible because it has no outstandingly remarkable values.

Silver Pass Creek (GIS Number 3.246)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Silver Pass Lake
- End Point: North Fork Mono Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 2.6
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Silver Pass Creek is ineligible because it has no outstandingly remarkable values.

Slide Creek (GIS Number 3.250)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters northeast of Stevenson Meadow
- End Point: North Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 2.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Slide Creek is ineligible because it has no outstandingly remarkable values.

South Fork Bear Creek (GIS Number 3.256)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters southeast of Three Island lake
- End Point: East Fork Bear Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 4.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: South Fork Bear Creek is ineligible because it has no outstandingly remarkable values.

South Fork Dinkey Creek (GIS Number 3.258.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Confluence of unnamed creek from Sportsman Lake
- End Point: Dinkey Creek
- Special Area: None

Mileage

- Studied: 3.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Variety Class A (Distinctive). Barren, granite-walled river canyons interspersed with patches of forested areas and views of lakes and granite domes. Connects to Dinkey Creek and offers views of Bear Mountain and Virginia Lakes.
- ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of barren, granite-walled canyons, lakes, and granite domes, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Geology**

- ◆ Description: Glacially scoured valley. Granitic bedrock with small metamorphic bodies including silicated marble bodies. Monzonite of Dinkey Dome and Granodiorite of Eagle Peak.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: South Fork Dinkey Creek is ineligible because it has no outstandingly remarkable values.

South Fork San Joaquin River (GIS Number 3.260.2)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Florence Lake Dam
- End Point: San Joaquin River
- Special Area: John Muir Wilderness

Mileage

- Studied: 28.0
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**
 - ◆ Description: Variety Class A. Steep granitic walls, domes, and deep canyons.
 - ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of granitic walls, domes, and deep canyons, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.
- **Geology**
 - ◆ Description: Glaciated landscape, u-shaped valley, hanging valleys.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: South Fork San Joaquin River is ineligible because it has no outstandingly remarkable values.

South Fork Willow Creek (GIS Number 3.262.1)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Confluence of Sand Creek and North Fork Sand Creek
- End Point: Forest boundary at private property

- Special Area: None

Mileage

- Studied: 4.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **History**
 - ◆ Description: Traditional cultural landscape for the Nim Mono people associated with the Late Prehistoric through early 20th century periods.
 - ◆ Determination: History is not an outstandingly remarkable value. Although there are historic sites within the segment, similar historic sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.
- **Prehistory**
 - ◆ Description: Ethnographic Nim hamlets and Indian Allotments.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: South Fork Willow Creek is ineligible because it has no outstandingly remarkable values.

Stairway Creek (GIS Number 3.265)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters south of Stairway Meadow
- End Point: Middle Fork San Joaquin River
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 3.9
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Fish (Population):**

- ◆ Description: Paiute cutthroat trout population. This subspecies evolved from Lahontan cutthroat trout (*O. c. henshawi*) in Silver King Creek, below Llewellyn Falls. The separation of the subspecies is believed to have occurred following the desiccation of Lake Lahontan.
- ◆ Determination: The fish (population) is not an outstandingly remarkable value. Paiute cutthroat trout are non-native and were introduced to this creek and are found in other locations within the region of comparison. They are endemic to and protected within the Carson Ranger District of the Humboldt-Toiyabe National Forest. Therefore, it is not considered outstandingly remarkable.

Summary: Stairway Creek is ineligible because it has no outstandingly remarkable values.

Statham Creek (GIS Number 3.266)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters on Rodgers Ridge
- End Point: Rancheria Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere

within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Statham Creek is ineligible because it has no outstandingly remarkable values.

Stevenson Creek (GIS Number 3.268.4)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Stevenson Creek at the base of the Shaver Lake Dam where the creek leaves private property and enters Sierra National Forest lands
- End Point: San Joaquin River
- Special Area: Critical Aquatic Refuge

Mileage

- Studied: 4.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Prehistory**
 - ◆ Description: Traditional cultural landscape.
 - ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there are prehistoric sites within the segment, similar prehistoric sites also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: Stevenson Creek is ineligible because it has no outstandingly remarkable values.

Sycamore Creek (GIS Number 3.273.3)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Sierra National Forest boundary with private property in section 11 east of Davis Mountain
- End Point: Sierra National Forest boundary with private property
- Special Area: None

Mileage

- Studied: 0.7

- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Cultural/Prehistory**
 - ◆ Description: Holkoma Mono cultural property associated with the mid to late 19th century diaspora of Native Californians.
 - ◆ Determination: Cultural/prehistory is not an outstandingly remarkable value. Although there is a cultural/prehistoric site within the segment, similar cultural/prehistoric sites also exist elsewhere within the region of comparison. Therefore, the site is not unique and not considered outstandingly remarkable.

Summary: Sycamore Creek is ineligible because it has no outstandingly remarkable values.

Timber Creek (GIS Number 3.279)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters west of Timber Knob
- End Point: West Fork Granite Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 1.7
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Timber Creek is ineligible because it has no outstandingly remarkable values.

Tombstone Creek (GIS Number 3.281)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters near Obelisk
- End Point: Middle Fork Kings River
- Special Area: Monarch Wilderness

Mileage

- Studied: 4.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Tombstone Creek is ineligible because it has no outstandingly remarkable values.

Turret Creek (GIS Number 3.283)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters northeast of Turret Peak
- End Point: Piute Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 1.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: Turret Creek is ineligible because it has no outstandingly remarkable values.

West Fork Bear Creek (GIS Number 3.290)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters Marshal Lake
- End Point: South Bear Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 3.5
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Scenery**

- ◆ Description: Views of lakes, granitic walls, and waterfalls.
- ◆ Determination: Scenery is not an outstandingly remarkable value. Although there are beautiful views of lakes, granitic walls, and waterfalls, similar views also exist elsewhere within the region of comparison and these views are not exemplary. Therefore, scenery is not considered outstandingly remarkable.

- **Geology**

- ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: West Fork Bear Creek is ineligible because it has no outstandingly remarkable values.

West Fork Granite Creek (GIS Number 3.294.1)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Slab Lakes
- End Point: Post Creek
- Special Area: Ansel Adams Wilderness

Mileage

- Studied: 4.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ♦ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ♦ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: West Fork Granite Creek (GIS Number 3.294.1) is ineligible because it has no outstandingly remarkable values.

West Fork Granite Creek (GIS Number 3.294.2)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Post Creek
- End Point: Confluence of Granite Creek at Granite Creek campground
- Special Area: At the confluence of West Granite Creek and Post Creek until the Wilderness boundary, West Fork Granite Creek is in the Ansel Adams Wilderness

Mileage

- Studied: 5.8
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **History**

- ◆ Description: Strawberry Mine was a tungsten mine used to supply tungsten during World War II.
- ◆ Determination: History is not an outstandingly remarkable value. Although there is historic mining within the segment, similar historic sites and many mines also exist elsewhere within the region of comparison. Therefore, the sites are not unique and not considered outstandingly remarkable.

Summary: West Fork Granite Creek (GIS Number 294.2) is ineligible because it has no outstandingly remarkable values.

West Fork Jackass Creek (GIS Number 3.295.2)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Confluence of Nehouse Creek
- End Point: Jackass Creek
- Special Area: None

Mileage

- Studied: 1.4
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**

- ◆ Description: Glaciated landscape.
- ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

- **Prehistory**

- ◆ Description: Intermediate Period prehistoric trail now called the French Trail.
- ◆ Determination: Prehistory is not an outstandingly remarkable value. Although there is a prehistoric trail within the segment, similar prehistoric trails also exist elsewhere within the region of comparison. Therefore, the trail is not unique and not considered outstandingly remarkable.

Summary: West Fork Jackass Creek is ineligible because it has no outstandingly remarkable values.

West Fork Portuguese Creek (GIS Number 3.306)

Location

- Ranger District: Bass Lake
- County: Madera
- Beginning Point: Headwaters south of Burro Lake
- End Point: East Fork Portuguese Creek
- Special Area: One mile is in Ansel Adams Wilderness

Mileage

- Studied: 3.3
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Fish (Population)**

- ◆ Description: Lahontan cutthroat trout population is one of 14 recognized subspecies of cutthroat trout in western United States. The species is managed under the recovery plan and is monitored annually for population abundance.
- ◆ Determination: The fish (population) is not an outstandingly remarkable value. This species is also found in several other creeks in the inventory and within the region of comparison. Therefore, it is not unique and not considered outstandingly remarkable.

Summary: West Fork Portuguese Creek is ineligible because it has no outstandingly remarkable values.

West Pinnacles Creek (GIS Number 3.297)

Location

- Ranger District: High Sierra
- County: Fresno
- Beginning Point: Headwaters south of Hoopal Lake

- End Point: Piute Creek
- Special Area: John Muir Wilderness

Mileage

- Studied: 2.1
- Eligible: 0.0

Eligibility Determination

Free Flow: Yes

Outstandingly Remarkable Values

- **Geology**
 - ◆ Description: Glaciated landscape, glacially scoured bedrock and valleys, moraines, glacial landforms.
 - ◆ Determination: Geology is not an outstandingly remarkable value. Although there are many beautiful and interesting geologic forms in this area, they also exist elsewhere within the region of comparison. Therefore, these features are not unique and not considered outstandingly remarkable.

Summary: West Pinnacles Creek is ineligible because it has no outstandingly remarkable values.

River Segments Previously Studied

Description of Previous Studies Completed

The National Rivers Inventory of January 1982 identified three rivers on the Sierra National Forest which may be suitable for inclusion in the National Wild and Scenic Rivers System:

- Merced River, including the South Fork
- San Joaquin River, including the North Fork, Middle Fork, and South Fork
- Kings River, including the Middle Fork

The 1986 Sierra National Forest Land and Resource Management Plan DEIS, Appendix E provides a detailed discussion of the eligibility study of the Merced, South Fork Merced, San Joaquin, North Fork San Joaquin, Middle Fork San Joaquin, South Fork San Joaquin, and Middle Fork Kings Rivers.

Merced River, Including the South Fork

Table C-8. Merced River Eligibility Study Results, 1988 Sierra National Forest LRMP DEIS, Appendix E

Merced River	Segment 7	Segment 8
Outstandingly Remarkable Values	Geology Vegetation Wildlife Recreation Cultural, History	Geology Vegetation Wildlife Recreation Cultural, History

Merced River	Segment 7	Segment 8
Beginning and End Points (Mileage)	West boundary El Portal Administrative Site to confluence with South Fork Merced River (5 miles)	Confluence with South Fork Merced River to Northwest boundary Sierra National Forest (5 miles)
Free Flowing	Yes	Yes
Impoundments	No	No
Diversions	No	No
Classification	Recreation	Recreation

Note: Segments 1 through 6 are managed by National Park Service; segments 9 and 10 are managed by Bureau of Land Management.

Table C-9. South Fork Merced River Eligibility Study Results, 1988 Sierra National Forest LRMP DEIS, Appendix E

South Fork Merced River	Segment 6	Segment 7
Outstandingly Remarkable Values	Geology Vegetation Wildlife Fisheries Recreation Cultural, History	Geology Wildlife Fisheries Recreation Cultural, History
Beginning and End Points (Mileage)	Yosemite National Park / Forest Service boundary to 2 miles upstream of Hite Cove (12 miles)	2 miles upstream of Hite Cove to confluence with Merced River (6 miles)
Free Flowing	Yes	Yes
Impoundments	No	No
Diversions	No	No
Classification	Wild	Scenic

Note: Segments 1 through 5 are managed by National Park Service.

During the course of preparing the 1988 Sierra National Forest LRMP and its accompanying EIS, Congress took a considerable amount of legislative action. For example, in November 1987 and October 1992, the Merced and the South Fork Merced Rivers were designated under the Wild and Scenic River Act, negating the need for further study. Management of the Merced River is shared by National Park Service, the Bureau of Land Management, and the Forest Service. The Forest Service sections include portions of the Sierra National Forest and the Stanislaus National Forest. However, the Sierra National Forest is the lead administrator of the Merced Wild and Scenic River.

San Joaquin River, Including the North Fork, Middle Fork, and South Fork

Table C-10. San Joaquin River Eligibility Study Results, 1988 Sierra National Forest LRMP DEIS, Appendix E

San Joaquin River	Segment 1	Segment 2
Outstandingly Remarkable Values	Geology Fisheries Scenery	Geology Fisheries Scenery
Beginning and End Points (Mileage)	Confluence of North Fork and Middle Fork San Joaquin River to Hells Half Acre (Ansel Adams Wilderness) (12 miles)	Hells Half Acre to Northeast end of Mammoth Pool Reservoir (2 miles)
Free Flowing	Yes	Yes
Impoundments	No	No
Diversions	No	No
Classification	Wild	Wild

Table C-11. North Fork San Joaquin River Eligibility Study Results, 1988 Sierra National Forest LRMP DEIS, Appendix E

North Fork San Joaquin River	Segment 1	Segment 2	Segment 3
Outstandingly Remarkable Values	Geology Wildlife Recreation Scenery	Geology Wildlife Recreation Scenery	Geology Wildlife Scenery Cultural, History
Beginning and End Points (Mileage)	Headwaters to Hemlock Crossing (Ansel Adams Wilderness) (4 miles)	Hemlock Crossing to Cora Creek (Ansel Adams Wilderness) (4 miles)	Cora Creek to confluence with the Main Fork San Joaquin River (Ansel Adams Wilderness) (6 miles)
Free Flowing	Yes	Yes	Yes
Impoundments	No	No	No
Diversions	No	No	No
Classification	Wild	Wild	Wild

Table C-12. Middle Fork San Joaquin River Eligibility Study Results, 1988 Sierra National Forest LRMP DEIS, Appendix E

Middle Fork San Joaquin River	Segment 4
Outstandingly Remarkable Values	Scenery Geology Recreation
Beginning and End Points (Mileage)	Rainbow Falls to confluence with North Fork San Joaquin (Ansel Adams Wilderness, Devils Postpile National Monument, Sierra National Forest) (9 miles)
Free Flowing	Yes
Impoundments	No
Diversions	No
Classification	Wild

Note: Segments 1 and 2 are on the Inyo National Forest, Segment 3 is Inyo National Forest and Devils Postpile National Monument.

Table C-13. South Fork San Joaquin River Eligibility Study Results, 1988 Sierra National Forest LRMP DEIS, Appendix E

South Fork San Joaquin River	Segment 2	Segment 3	Segment 4
Outstandingly Remarkable Values	Geology Wildlife Scenery	Wildlife Scenery	Wildlife Scenery
Beginning and End Points (Mileage)	Kings Canyon National Park / Sierra National Forest boundary to Hot Springs area (John Muir Wilderness) (3 miles)	Hot Springs area to west end of Blayney Meadows (private parcel) (2 miles)	Blayney Meadows area to end of Florence Lake (John Muir Wilderness) (2 miles)
Free Flowing	Yes	Yes	Yes
Impoundments	No	No	No
Diversions	No	No	No
Classification	Wild	Recreation	Scenic

Note: Segment 1 is managed as wilderness by Kings Canyon National Park.

In 1992, the following San Joaquin River segments that were not included in the Congressional designations were determined to be suitable and are currently managed as recommended wild and scenic rivers until Congress makes a final determination on their designation:

- 14 miles of the North Fork San Joaquin River from its headwaters in sec 8, T3S, R25 E to the confluence with the Main Fork San Joaquin River.
- 22 miles of the Middle Fork San Joaquin River from its headwaters at Thousand Island Lake to the confluence with the North Fork San Joaquin River.
- 12 miles of the San Joaquin River from the confluence of the Middle Fork San Joaquin River with the North Fork San Joaquin River to Hells Half Acre.

- 17 miles of the South Fork San Joaquin River from its headwaters to the south end of Florence Lake.

Kings River, Including the Middle Fork

Table C-14. Middle Fork Kings River Eligibility Study Results, 1988 Sierra National Forest LRMP DEIS, Appendix E

Middle Fork Kings River	Segment 2
Outstandingly Remarkable Values	Geology Wildlife Recreation Scenery Cultural, History
Beginning and End Points (Mileage)	Southeast boundary Sierra National Forest to confluence of the Middle Fork Kings River with the South Fork Kings River, at the north boundary of Sequoia National Forest) (Monarch Wilderness) (8 miles)
Free Flowing	Yes
Impoundments	No
Diversions	No
Classification	Wild

Note: Segment 1 is managed as wilderness by Kings Canyon National Park.

- In November 1987, the Kings River, from the confluence of the Middle Fork with the South Fork to the point at elevation 1,595 feet above mean sea level, was designated under the Wild and Scenic River Act, negating the need for further study. The Middle Fork, from its headwaters at Lake Helen to its confluence with the main stem, was also designated. The South Fork, from its headwaters at Lake 11599 to its confluence with the main stem, was also designated.
- In addition, a 48,000-acre Kings River Special Management Area, including the Kings River from the confluence of the Middle Fork with the South Fork to Bailey Bridge, was designated.
- During the course of preparing the 1988 Sierra National Forest LRMP and its accompanying EIS, the lower Kings River, from the confluence of Garlic Meadow Creek with the main stem to the high water line of Pine Flat Reservoir was not studied because of ongoing controversy and discussions about raising the height of Pine Flat Dam, which would result in the flooding of this segment. This was appealed and in part of the appeal's settlement, the segment was studied for eligibility as Segments 3, 4, and 5 in the 1991 Kings River Special Management Area Implementation Plan, Appendix B, as shown in Table C-15. These three segments of the Lower Kings River were included in the current study

Table C-15. Lower Kings River Eligibility Study Results, 1991 Kings River Special Management Area Implementation Plan, Appendix B

Lower Kings River	Segment 3 (Sierra National Forest)	Segment 4 (Sierra National Forest)	Segment 5 (Sequoia National Forest)
Outstandingly Remarkable Values	Scenery Recreation Geology Botanical Wildlife/Fish Cultural/Historic Science/Educational	Scenery Recreation Geology Wildlife/Fish Cultural/Historic Science/Education	Scenery Recreation Wildlife/Fish Cultural/Historic
Beginning and End Points (Mileage)	Elevation 1595 to Garnet Dike (4 miles)	Garnet Dike to Kings River Special Management Area boundary (7 miles)	Kings River Special Management Area boundary to high water line of Pine Flat Reservoir (1 mile)
Free flowing	Yes	Yes	Yes
Impoundments	No	No	No
Diversions	No	No	No
Classification	Wild	Scenic	Recreational

Changed Circumstances and New Information Since Previous Studies

The Sierra National Forest interdisciplinary team reviewed the 1986 Draft Environmental Impact Statement for the Sierra National Forest Land and Resource Management Plan, Appendix E and found there were no changed circumstances or new information that affected free flow, outstandingly remarkable values, previous eligibility determinations, preliminary classification, or suitability for the river segments listed in Table C-10, Table C-11, Table C-12, and Table C-13, including two segments of the San Joaquin River, three segments of the North Fork San Joaquin River, one segment of the Middle Fork San Joaquin River, and three segments of the South Fork San Joaquin River.

The interdisciplinary team also reviewed the 1991 Kings River Special Management Area Implementation Plan and found there were no changed circumstances or new information that affected free flow, outstandingly remarkable values, previous eligibility determinations, or preliminary classification for the river segments listed in Table C-15, including three segments of the Lower Kings River.

The Sierra National Forest interdisciplinary team found the record to be complete. The outstanding remarkable values of the eligible and recommended rivers segments is well defined and acceptable as written during the previous eligibility and suitability studies. These rivers will continue to be managed as recommended wild and scenic rivers until Congress makes a final determination on their designation.

However, there are portions of the San Joaquin River, South Fork San Joaquin River, and North Fork Kings River that were not included in the previous studies. These segments were included in the current study and documented in this appendix.

Description of the Wild and Scenic Rivers Study Process

Inventory

The inventory was completed considering best available scientific information and public input. Table C-16 shows the total number of river segments included in the inventory for each forest and Map C-1 and Map C-2 show the locations of the river segments included in the inventory for each forest.

The inventory was developed through the following steps:

1. A regional hydrologist used the national hydrological dataset to create a preliminary list of rivers and river segments that were the equivalent of all named rivers on a 7.5 minute quad. This preliminary list was then checked against the standard U.S. Geological Survey 7.5 minute quadrangle maps to ensure that all named rivers were included.
2. Any of the named rivers in the dataset that were already designated as wild and scenic rivers were removed from the inventory.
3. Any rivers recommended as an addition to the National Wild and Scenic Rivers System through a previous suitability study and NEPA process were removed from the inventory.
4. To ensure that rivers of interest identified by the public were included in the inventory, the following references were reviewed:
 - **Sierra Forest Legacy Conservation Strategy, wild and scenic river appendix:**
http://www.sierraforestlegacy.org/FC_ConervationStrategy/FC_ConervationStrategy2.php
 - **The Nationwide Rivers Inventory (NRI):**
<http://www.nps.gov/ncrc/programs/rtca/nri/index.html>
 - **Listing of California rivers that are part of the National Rivers Inventory created by the National Park Service:**
<http://www.gehwa.org/Wild%20&%20Scenic%20River%20Files/NRI/California%20NRI%20205S-3264M.pdf>
 - **Friends of the River publication “Potential Wild and Scenic Rivers in California – 2001 Inventory:**
http://www.friendsoftheriver.org/site/DocServer/2001PWSRC_Inventory.pdf?docID=222

Identified 5 river segments on the Sequoia National Forest and 7 on the Sierra National Forest.

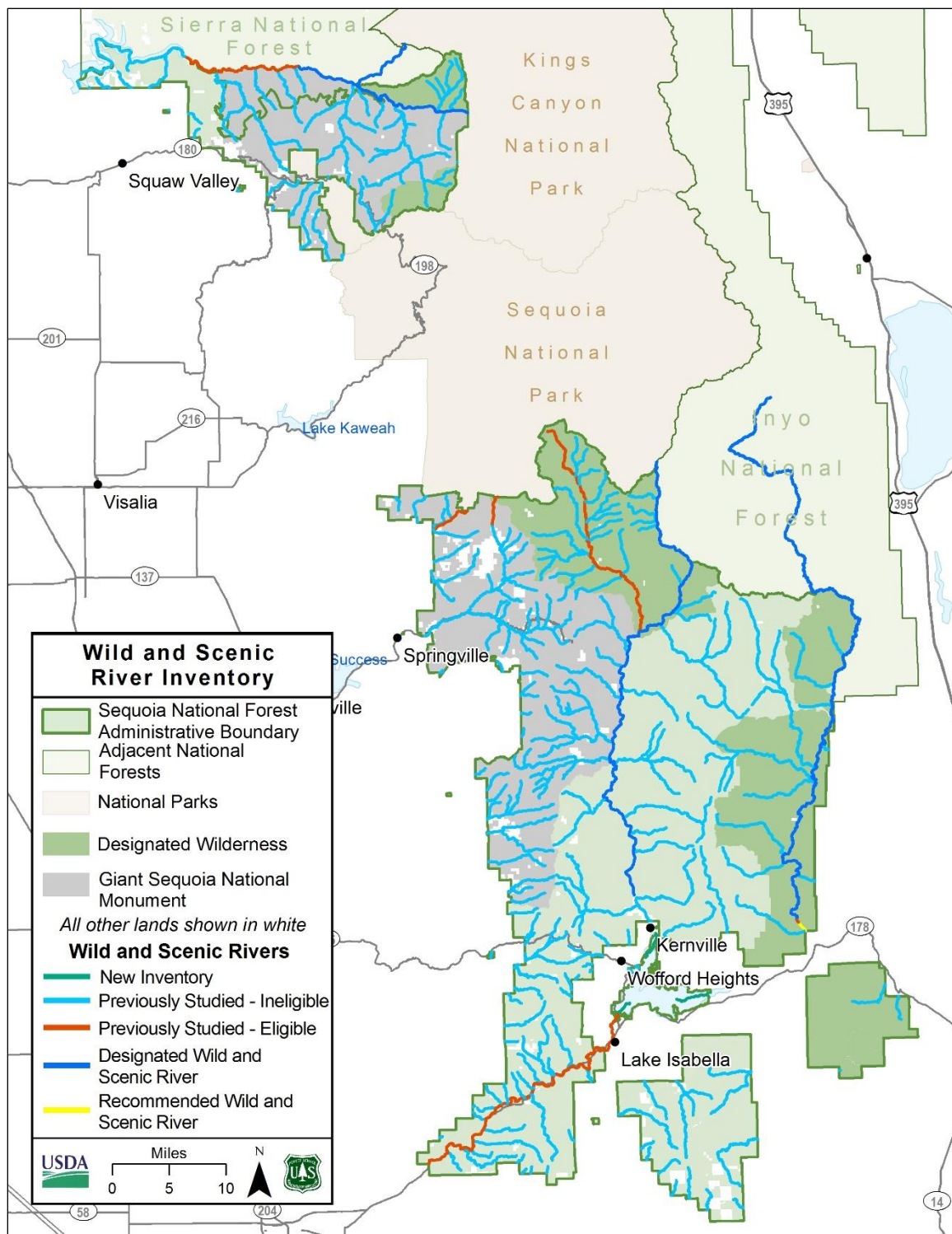
5. Detailed feedback specific to wild and scenic rivers received during the assessment phase of the forest plan revision process was compiled into a report (Wild & Scenic Rivers (WSR) – Public Feedback from Assessment Phase, 11/25/13) and reviewed for content related to rivers of interest to include in the inventory. It was affirmed that all rivers of interest were included in the inventory.
6. Comments on wild and scenic rivers were received during the public comment period for the proposed action. The comments were also reviewed for content related to rivers of interest to include in the inventory. It was affirmed that all rivers of interest were included in the inventory.

7. Comments on wild and scenic rivers were also received in the 2016 draft environmental impact statement that requested specific rivers and creeks be added to the inventory that were not previously considered. Upon approval by the responsible official these rivers and creeks were added to the inventory.
8. After the final inventory dataset was created, all records of previous wild and scenic river eligibility and suitability study were examined and segments that had been included in previous studies were identified. The previous findings for eligibility, outstandingly remarkable values, and classification were documented in the dataset. The inventory was then divided into river segments that had been included in previous studies and those that had not.

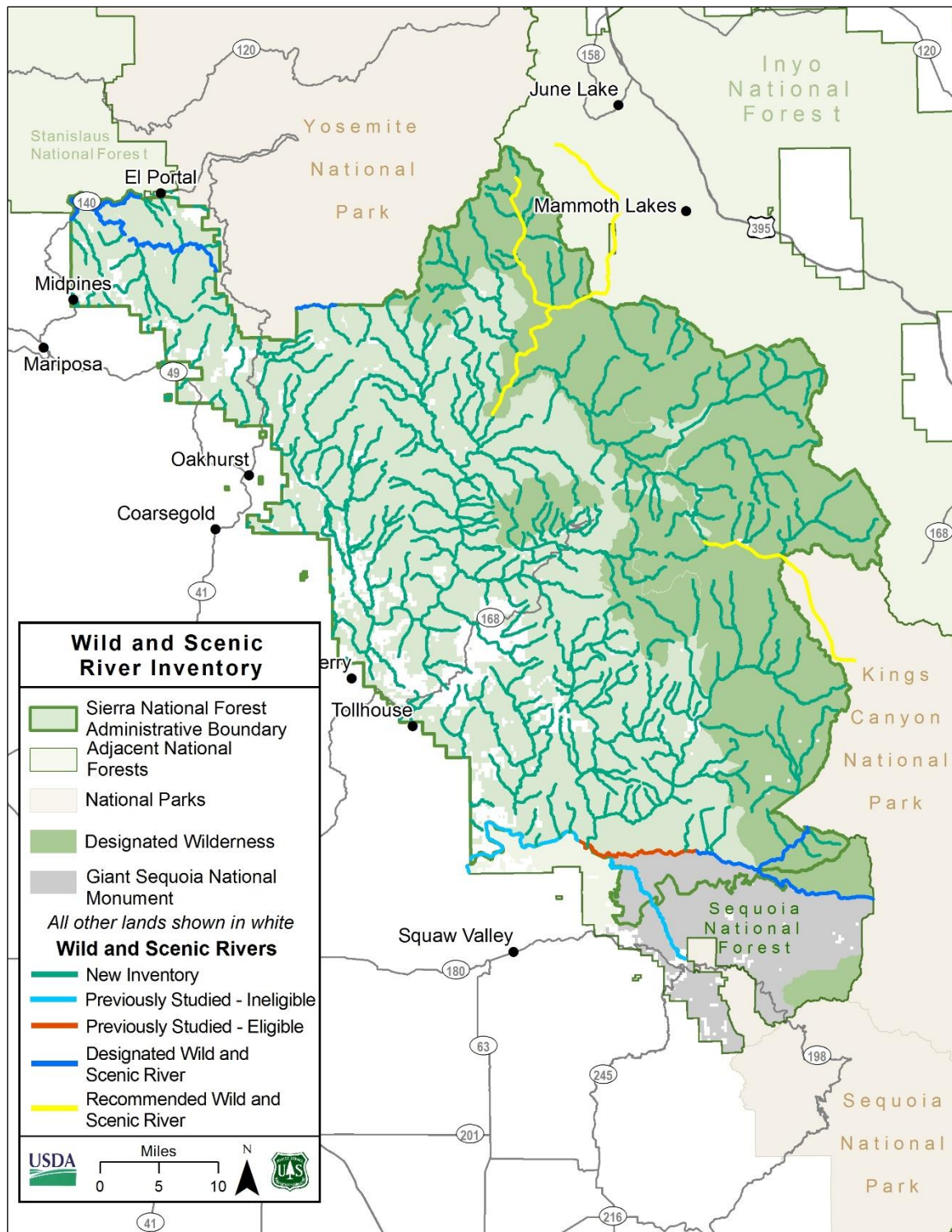
Table C-16. Inventory of all potential wild, scenic, and recreational rivers, Sequoia National Forest and Sierra National Forest

Inventory	Sequoia National Forest	Sierra National Forest
# of River Segments Previously Studied (Approximate Mileage)	268 ⁴ (1,058.4 miles)	0 (0 miles)
# of River Segments Not Previously Studied (Approximate Mileage)	2 (6.9 miles)	410 (1,460.9 miles)
Total # of River Segments (Approximate Mileage)	270 (1,065.3 miles)	410 (1,460.9 miles)

⁴ Includes 4 river segments (approximately 30.2 miles) of the Lower Kings River (from elevation 1595 to the National Forest boundary). For the purposes of this study, the Lower Kings River was included within the Sequoia National Forest river segments. In another previous eligibility study, these segments were included within the Sierra National Forest, as described below in the Sierra National Forest, River Segments Previously Studied section.



Map C-19. Sequoia National Forest Wild and Scenic River Inventory Map



Map C-20. Sierra National Forest Wild and Scenic River Inventory Map

Eligibility Determination and Preliminary Classification

River Segments Analysis

Each national forest interdisciplinary team completed the following steps:

1. Identified which river segments may have river-related values for scenery, recreation, geology, fish and wildlife populations and habitat, prehistory, history, or other river-related values (i.e. paleontological or botanical), including reviewing public comments on the 2016 Draft Environmental Impact Statement for information about river-related values. In this initial screening step, values that may be unique, rare, exemplary, or significant at a regional or national scale were identified, but a determination was not made about the relative significance of the values. Potential river-related values were documented in the dataset. If a river segment had no values that were identified, it was not carried forward for further study.

Criteria used to identify river-related values are described below:

- a) Scenery – The landscape elements of landform, vegetation, water, color and related factors result in notable or exemplary visual features or attractions.
- b) Recreation – Recreational opportunities are, or have the potential to be, popular enough to attract visitors from throughout or beyond the region of comparison or are unique or rare within the region. Recreation opportunities within the region of comparison are diverse and attract visitors from outside the region. Common recreation activities include developed and dispersed camping, picnicking and day use, hiking, mountain biking, off-highway vehicles, fishing, sightseeing, and general forest exploration. Unique or rare recreation opportunities within the region of comparison would include unique fishing opportunities for heritage trout populations, whitewater rafting, boating, and sightseeing and photography related to scenery values.
- c) Geology – The river, or the area within the river corridor, contains one or more example of a geologic feature, process, or phenomenon that is unique or rare within the region of comparison. Potential outstanding values for geology included glacial features, volcanic features, and unique rock formations.
- d) Fish – The presence of wild stocks, or federal or state-listed threatened, endangered, or sensitive species or the river provides exceptionally high quality habitat for these fisheries. Within the region of comparison, creeks with heritage trout were identified as having river-related values.
- e) Wildlife – The presence of wildlife species considered to be unique and/or Federal or State listed threatened, endangered, or sensitive species or the river corridor provides exceptionally high quality habitat for these species. Creeks with threatened, endangered or sensitive amphibian species were also considered. Within the region of comparison, creeks with Sierra, mountain, or Foothill yellow-legged frog, or Yosemite toad were identified as having river-related values.
- f) Prehistory - The river, or area within the river corridor, contains one or more sites where there is evidence of occupation or use by Native Americans. Sites must have unique or rare characteristics or exceptional human interest values. Sites

may have national or regional importance for interpreting prehistory; may be rare and represent an area where a culture or cultural period first identified and described; may have been used concurrently by two or more cultural groups; and/or may have been used by cultural groups for rare sacred purposes. Many such sites are listed on the National Register of Historic Places, which is administered by the National Park Service.

g) History – The river or area within the river corridor contains one or more sites or features associated with a significant event, an important person, or a cultural activity of the past that was rare or one-of-a-kind in the region. Many such sites are listed on the National Register of Historic Places. A historic site or features is 50 years old or older in most cases.

h) Other (Botanical): Unique and rare plants, vegetation types, and ecosystems.

2. Determined which river segments had free flow. Free flowing is defined in the National Wild and Scenic Rivers System Act:

Existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification. Low dams, diversion works, and other minor structures may be permitted, provided the waterway remains generally natural and riverine in appearance. Segments of rivers above or below impoundments can also qualify as free flowing. There is no established minimum size for eligibility, either in length or volume of flow. Flows are considered sufficient for eligibility if they sustain or complement the outstandingly remarkable values for which the river would be designated.

Anecdotal references, local-knowledge of Forest Service employees involved in land management, public comments on the 2016 Draft Environmental Impact Statement, and Forest Service GIS databases were used to determine whether each river segment has free flow, as defined in the Wild and Scenic Rivers Act. Free flow information was documented in the dataset.

3. Documented a region of comparison for determining if any river-related values are outstandingly remarkable values.
4. Documented criteria for determining if any river-related values are outstandingly remarkable values. The Interagency Wild and Scenic Rivers Coordinating Council technical paper “The Wild and Scenic River Study Process,” describes the baseline criteria. Any additional criteria used are documented in the results section of this appendix, before the river segment details.
5. Determine if any river-related values are outstandingly remarkable values using the regions of comparison, criteria, and best available science. Outstandingly remarkable values information for each river segment was documented in the dataset and the results section of this appendix. River segments with both free flow and at least one outstandingly remarkable value were determined to be eligible for inclusion in the National Wild and Scenic Rivers System.
6. Assigned a preliminary classification to all eligible river segments based on the condition of the river segment and the development level of adjacent lands as they exist at the time of the study. Preliminary classifications for each river segment were documented in the dataset.

7. Study results for each river segment were documented in the results section of this appendix with the following information:
 - River segment name
 - River segment geographic information system number
 - River segment location
 - River segment beginning point description
 - River segment end point description
 - Name(s) of any special areas that intersect with the river segment
 - Mileage of the total river segment length studied
 - Mileage of the total river segment length determined eligible
 - Free flow determination
 - Outstandingly remarkable values determination, including a description for each river-related value that was studied
 - Summary of eligibility determination
 - Preliminary classification

River Segments Previously Studied

Each national forest interdisciplinary team completed the following steps:

1. Compiled and summarized any previous wild and scenic river studies that were completed.
2. Determined if there were any changed circumstances or new information since previous studies, using the best available science and public input. This included reviewing river segments previously determined eligible as well as river segments previously determined ineligible, using the same regions of comparison and outstandingly remarkable values criteria as river segments not previously studied. If changed circumstances or new information was identified, it was documented in the results section of this appendix.
3. Determined if any changed circumstances or new information affected free flow, outstandingly remarkable values, previous eligibility determinations, or preliminary classification, and documented the effects in the results section of this appendix.
4. Reviewed the record to ensure that comprehensive study results information existed for river segments determined to be eligible for inclusion in the National Wild and Scenic Rivers System without changes from previous studies. If the record was incomplete, the missing information was added to the results section of this appendix.

Summary of Public Input

The public provided input on the wild and scenic rivers studies through three avenues:

1. Comments during the November 2013 Assessment phase on the Assessment Topic Papers for Designated Areas
2. Comments on the notice of intent and proposed action

3. Comments on the 2016 Draft Environmental Impact Statement.

In general, the comments provided suggestions on five topics:

1. Comprehensive river management plans for existing designated wild and scenic rivers.
 - a) The forest plans should include a process and timeline to update the existing comprehensive river management plans for the North and South Forks of the Kern River, Kings River, and Merced Rivers because of changed circumstances, including potential impacts to outstandingly remarkable values and increases in the nonboating recreation use, particularly on the North Fork of the Kern River.
 - b) The forest plans should include interim measures to protect the outstandingly remarkable values of wild and scenic rivers until comprehensive river management plans are updated or completed.
2. Process used to determine which river segments are eligible rivers for inclusion in the National Wild and Scenic River System.
 - a) The Forest Service should complete a new study process for wild and scenic rivers during forest plan revision, including a comprehensive inventory of potentially eligible creeks, and suitability studies for eligible creeks. For previously inventoried rivers, new information or changed circumstances should trigger updates to the inventory.
 - b) Suitability determinations should be deferred until triggered by either a conservation or development proposal and are not necessary during forest plan revision.
 - c) Sequoia National Forest should complete suitability determinations for river segments determined to be eligible because the Sequoia National Forest made this commitment through settlement agreements on their current land and resource management plans during the early 1990s.
 - d) Sequoia National Forest should determine the suitability of the North Fork and Middle Fork of the Tule River to fulfill its commitment made in the 1990 appeal settlement agreement.
 - e) Sequoia National Forest should determine the suitability of the unprotected segments of the Kings River during forest plan revision.
 - f) Sequoia National Forest should coordinate with the Bureau of Land Management on the suitability study of the lower Kern River because the Bureau of Land Management administers the upper 3.2 miles of the river segment.
 - g) Sierra National Forest should conduct a study of rivers that were not included in the National River Inventory because of the Sierra National Forest made commitments in the 1992 record of decision for its land and resource management plan.
 - h) Sierra National Forest should retain the recommendation for designation of the upper San Joaquin, North Fork San Joaquin, and Middle Fork San Joaquin Rivers it made in the 1992 Record of Decision for the Land and Resource Management Plan. In addition, the changed circumstances on the South Fork San Joaquin, which now has partially restored flows, should be studied.

- i) Sierra National Forest should amend its wild and scenic river recommendation for the main stem San Joaquin to include the lower two miles of the main stem because there are no plans for expansion of the Mammoth Pool Reservoir.
 - j) Sierra National Forest should study Dinkey Creek because it is free-flowing and possesses outstandingly remarkable scenic, recreational, cultural, historical, geological, botanical, fisheries, and wildlife values.
 - k) Sierra National Forest should study segments of the following creeks because they are free-flowing and possess outstandingly remarkable whitewater recreation and scenic values: Big Creek, North Fork Willow Creek, Big Creek (tributary of San Joaquin River), Big Creek (tributary of Kings River), North Fork Kings River, Helms Creek, Mono Creek, Bear Creek, and Granite Creek.
 - l) The Forest Service should complete suitability studies during forest plan revision because if these studies are not completed, separate National Environmental Policy Act analysis would be required, which would involve additional staff costs. Also, individual suitability studies limit the context of river decisions presented to the public.
 - m) The Forest Service should retain the suitability determination of several rivers it has previously recommended for inclusion in the National Wild and Scenic Rivers System.
3. Outstandingly remarkable values of rivers segments studied for eligibility
- a) The North and South Fork of the Kern River and the Kings and South Fork Kings Rivers (Sequoia National Forest) have outstandingly remarkable whitewater boating opportunities.
 - b) The San Joaquin River (Sierra National Forest) has outstandingly remarkable geological values due to its glacially carved canyons.
 - c) The South Fork Merced River (Sierra National Forest) has outstandingly remarkable whitewater boating opportunities.
4. Plan components for wild and scenic rivers in the revised forest plans
- a) The desired conditions for wild and scenic rivers should include maintaining and enhancing river flow conditions for recreation.
 - b) The desired condition statement for wild and scenic rivers should be more extensive, such as the statement contained in the Sierra Nevada Framework document.
 - c) The guidelines for wild and scenic rivers should include the protection of in-stream flows for recreational values.
 - d) The management areas in the forest plans should include one or more geographic areas for wild and scenic rivers to better organize the wild and scenic river plan components.
 - e) The Forest Service should not include any plan components that limit fish stocking or limit angling on wild and scenic rivers.
 - f) Any potential contribution of timber from designated wild and scenic rivers to the timber sale program should be described in the plan components.

5. Support for or against additional wild and scenic river designations
 - a) Wild and scenic rivers are places where wildlife can live and thrive relatively undisturbed.
 - b) Additional wild and scenic river designations would limit the agency's ability to make the forest more fire resilient.
 - c) The South Fork Kings River upstream from its confluence with the North Fork Kings and Pinkey (sic) Creek should be excluded from consideration because of they are potential sites for hydroelectric projects.

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Appendix D

Persistence Analysis for Species of
Conservation Concern

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Appendix D.

Persistence Analysis for Species of Conservation Concern

Introduction

2012 Planning Rule Framework for Species Persistence Analysis

The 2012 Planning Rule⁵ requires the forest plan to include plan components,⁶ to “maintain or restore”: (1) “the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area”; and (2) “the diversity of ecosystems and habitat types throughout the plan area.” It also requires plans be based on a complementary ecosystem and species-specific approach; this approach is referred to as the coarse-filter and fine-filter approach.

Under 36 CFR 219.9(b)(1), the responsible official (here the Forest Supervisor for the Sequoia and Sierra National Forests) must determine whether the plan components required by 36 CFR 219.9(a) provide the ecological conditions necessary to “contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern⁷ within the plan area.” The Planning Rule sets forth three possible outcomes of the responsible official’s analysis of plan components with respect to species of conservation concern. Additionally, a fourth outcome may arise when the planning unit has developed a set of ecosystem based plan components it thinks will provide for species persistence, but also provides supplementary species-specific plan components for greater emphasis and clarity (all four determinations are presented in the “Determination” section below).

- a. The responsible official may find that the plan components required by 36 CFR 219.9(a) are sufficient to provide the ecological conditions necessary to maintain a viable population of each species of conservation concern within the planning area. 36 CFR 219.9(b)(1).
- b. The responsible official may determine that the plan components required by 36 CFR 219.9(a) are insufficient to provide the ecological conditions necessary to maintain a viable population of each species of conservation concern within the planning area, and that “additional, species-specific plan components, including standards or guidelines, must be included in the plan to provide such ecological conditions in the plan area.” 36 CFR 219.9(b)(1).
- c. The responsible official may determine “that it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the

⁵ 36 CFR 219.9(a)

⁶ The 2012 Planning Rule sets forth five required plan components (desired conditions, objectives, standards, guidelines, and suitability of lands) and one optional plan component (goals). 36 CFR. 219.7(e)(1)–(2). 36 CFR 219.7(f)(1)–(2) sets forth other required and optional content in the plan.

⁷ A “species of conservation concern” is defined as “species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species’ capability to persist over the long-term in the plan area.” 36 CFR 219.9(c).

ecological conditions to maintain a viable population of a species of conservation concern in the plan area.” If the responsible official makes this determination, it shall: (1) document the basis for the determination; and (2) “[i]nclude plan components, including standards and guidelines, to maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range,” in coordination with other Federal, State, Tribal, and private land managers.⁸

This species persistence analysis documents the rationale for the responsible official’s determination for each species of conservation concern in the plan area, including: (1) the plan components required by 36 CFR 219.9(a) are sufficient to provide the ecological conditions necessary to maintain a viable population of that species of conservation concern within the planning area; or (2) additional, species-specific plan components must be included in the plan to provide the ecological conditions necessary to maintain a viable population of that species of conservation concern within the planning area; or (3) that it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of that species of conservation concern in the plan area.

“Viable Population” Defined

The Planning Rule defines a “viable population” as “[a] population of a species that continues to persist over the long term with sufficient distribution to be resilient and adaptable to stressors and likely future environments.”⁹ The Forest Service Handbook 1909.12, section 23.13c (1)(b) notes that the preamble to the proposed Planning Rule¹⁰ addresses the meaning of the word “population” for planning purposes, explaining: “the individuals of a species of conservation concern that exist in the plan area will be considered to be members of one population of that species.”

The Handbook further defines the words and phrases “persist over the long-term,” “sufficient distribution,” “resilient,” and “adaptable,” used in the Planning Rule’s definition of “viable population,” as follows:

The words “persist over the long-term” means the species continues to exist in the plan area over a sufficiently long period that encompasses multiple generations of the species, the time interval between major disturbance events, the time interval to develop all successional stages of major habitat types, or the time interval needed for the overall ecosystem to respond to management. Understand that confidence in the evaluations of persistence decreases rapidly as the timeframe of projections increases and that the responsible official will change plan components using plan amendments and plan revisions when the responsible official decides plan components need to be changed because of changed conditions (FSH 1909.12 section 23.13c (1)(c)).

Whether there is “sufficient distribution” of a species should be considered in the context of the species’ natural history and historical distribution and on the potential distribution of the habitat within the plan area. Recognize that habitat and population distribution are dynamic over time. Sufficient distribution also implies a distribution that permits individuals to interact within the plan area within the constraints of the species’ natural history. Sufficient distribution implies that ecological conditions are provided to support redundancy in numbers such that losing one or some without replacement will still support a viable population. It should not be expected that management of National

⁸ 36 CFR 219.9(b)(2)

⁹ 36 CFR 219.19

¹⁰ 77 FR 21217, April 9, 2012

Forest System lands would provide broadly or evenly distributed habitat throughout a plan area for all species. Furthermore, as long as there is enough habitat in the plan area to maintain a viable population, there is no requirement that habitat to maintain all known individuals or the maximum possible number of individuals of a species must be available in the plan area (FSH 1909.12, section 23.13c(1)(d)).

The word “resilient” suggests that when disturbance events or stressors result in the local disappearance of individuals or extirpation from an area, recolonization of suitable habitat may occur in the future to facilitate long-term persistence in the plan area (FSH 1909.12 section 23.13c(1)(e)).

The word “adaptable” means that the species is able to adjust to new conditions. Ecological conditions to support the species are distributed in a way that the species may be represented in a variety of locally adapted ecotypes for increased likelihood of persistence in unknown future environments (FSH 1909.12 section 23.13c (1)(f)).

Organization of this Species Persistence Analysis

This document describes and puts into context the current planning regulations and policies that informed the development of the Sequoia and Sierra National Forests Revised Draft Environmental Impact Statement and Land and Resource Management Plans (also referred to as the “forest plans”). The regulations and policies themselves, however, are not directly incorporated into this document.

This appendix is a combination of the Sequoia National Forest and Sierra National Forest species persistence analyses for animal and plant species of conservation concern. Many of the species of conservation concern occur on both forests and are subject to similar threats. Many of the ecosystem-level components and plan considerations are the same in both forest plans, though there are a few specific measures to each plan. Due to this and the consideration that each Forest Supervisor must make a separate decision for their respective forest, the analyses are organized by species, but with designation if that species occurs on one or both forests and with separate analyses for the respective forest. Information (i.e. key ecological conditions, summary table, threats, and determinations) relevant to both forests is presented, as well as specific forest conditions, plan area occurrence, and summary of determination. Subheadings demark which forest species occur.

There are several required plan components and optional plan components (e.g., goals) and other plan content (such as potential management approaches) in the plan, that serve as an overall foundation for providing the ecological conditions necessary to support the persistence of species of conservation concern within a plan area. Plan direction includes desired conditions that provide necessary ecological conditions and includes goals to increase the communication, cooperation, and collaboration with all lands partners to further conservation of at-risk species regionwide. Species of conservation concern are a subset of at-risk species. At-risk species also include federally recognized threatened, endangered, proposed, and candidate species. Because the ecosystem-level component rely heavily upon desired conditions to frame the movement of the national forests’ ecological conditions over time, it also includes standards and guidelines to ensure project-level, site-specific contributions of the plan areas meet needs for at-risk species, and are considered early in a project’s environmental planning process.

To document the plan components that provide for the key ecological conditions and address any key threats within the plan area, a species-by-species evaluation follows for each terrestrial and aquatic species of conservation concern. A separate evaluation was prepared for botanical species of conservation concern. For each species there is an evaluation of the ecological conditions and

threats in the plan area followed by a listing of the relevant plan components that address each of the key ecological conditions and threats identified. For most species, the ecological conditions needed by at-risk species are adequately addressed by ecosystem plan components, and in many cases, additional species-specific plan components were only needed to provide additional clarity and emphasis. In a few cases, species-specific plan components were essential to species persistence and long-term viability in the plan area.

The plan component coding follows a standard format where the first two parts identify the resource and applicable area for the direction and the third part identifies the type of plan component. All plan components are numbered sequentially in the forest plan, but the numbers do not convey a ranking or priority. Goals are optional numbered plan components. Potential management approaches and proposed or possible actions are additional plan content and are not numbered. Persistence analysis is based on required and optional plan components (desired conditions, objectives, standards, guidelines, suitability of lands, and goals). Potential management approaches are included where applicable to describe the principal strategies and program priorities the responsible official intends to employ to carry out projects and activities developed under the plan.

Forestwide Plan Components for Species At Risk

Several plan components focus and are specifically for at-risk species, or specifically for species of conservation concern, while others that support at-risk species are written more generally to support all native terrestrial and aquatic species. While generally broad, these plan components provide for ecosystems and habitat conditions that will be resilient to disturbance (both natural and human caused) and the interrelated effects of climate change. They also mitigate site-specific effects that might occur during projects or national forest management activities implemented under the land management plan in riparian areas, watersheds, terrestrial ecosystems, recreation areas, and wilderness. These plan components include the following:

Animals and Plant Species

Desired Conditions (SPEC-FW-DC)

- 02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impacts from threats (such as disease and other site-specific threats). Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for **species of conservation concern**.
- 03 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements of special habitats (like special features such as carbonate rock outcrops) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for **at-risk species** with restricted distributions.

Goals

- 03 Work with the California Department of Fish and Wildlife (following the memoranda of understanding) and U.S. Fish and Wildlife Service to restore and maintain essential habitat for **at-risk species** and implement other recovery actions according to species recovery plans.

Standards (SPEC-FW-STD)

- 01 Where pesticide applications are proposed within 500 feet of known occupied sites for Yosemite toad, Sierra Nevada yellow-legged frog, Mountain yellow-legged frog, and for

other aquatic and riparian **at-risk species**, design applications to avoid adverse effects to individuals and their habitats.

Guidelines (SPEC-FW-GDL)

- 01 Design features, mitigation, and project timing considerations should be incorporated into projects that may affect habitat for **at-risk species** where they occur to minimize impacts to ecological conditions that provide for the persistence of at-risk species.
- 02 Known nest, roost, or den trees used by **species of conservation concern**, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the reasonably unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements.
- 05 Habitat management objectives or goals from approved conservation strategies or agreements should be incorporated, if appropriate, in the design of projects that will occur within **at-risk species** habitat.
- 05 Water developments (such as a diversion or well) should be avoided near streams, seeps, and springs where there is high risk of dewatering aquatic and riparian habitats where **at-risk species** occur.

Terrestrial Ecosystems and Vegetation

Desired Conditions (TERR-FW-DC)

- 05 Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and support the persistence of **species of conservation concern**.
- 06 The landscape contains a mosaic of vegetation types and structures that provide habitat and connectivity for a variety of species including wide-ranging habitat generalists such as black bear and mule deer; more localized, semi-specialists such as ground-nesting and cavity-nesting birds and mammals; and habitat specialists such as old forest and early seral associated species.

Guidelines (TERR-FW-GDL)

- 01 Projects facilitate increasing heterogeneity at all scales, from tree clumps to large landscapes. Several treatment strategies can be employed: using landscape topography (slope, aspect, and slope position) to vary stand densities; promoting tree clumps and gaps within a stand, increasing the proportion of large to small trees; retaining important habitat structures such as large trees, snags, and trees with broken tops; and increasing diversity by promoting hardwoods, pines and native plant species. Exceptions: does not apply to community buffers.
- 06 Design vegetation treatments to maintain or enhance special habitat features.

Watersheds

Desired Conditions (WTR-FW-DC)

- 01 Adequate quantity and timing of water flows support ecological structure and functions, including aquatic species diversity and riparian vegetation. Watersheds are resilient to changes in air temperatures, snowpack, timing of runoff, and other effects of climate change.
- 02 Water quality supports State-designated beneficial uses of water. Water quality is sustained at a level that retains the biological, physical, and chemical integrity of aquatic systems and benefits the survival, growth, reproduction, and migration of native aquatic and riparian species.

Standards (WTR-FW-STD)

- 03 For exempt hydroelectric facilities on National Forest System lands, ensure that special use permit language provides adequate in-stream flow requirements to maintain, restore, or recover favorable ecological conditions for local riparian- and aquatic-dependent species.
- 04 After restoration actions (including soil disturbance or seeding activities), limit subsequent soil-disturbing management activities until project objectives have been met.

All Riparian Conservation Areas

Desired Conditions (MA-RCA-DC)

- 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of **species of conservation concern** as well as native aquatic and riparian-dependent plant and animal species.
- 06 Soil structure and function is sustained to infiltrate and disperse water properly, withstand erosive forces, sustain favorable conditions of stream flow, and cycle nutrients. Associated water tables support riparian vegetation and restrict nonriparian vegetation.
- 08 The condition of riparian vegetation, including riparian species composition, stand density, and fuel loading, is consistent with healthy riparian systems and reduces risks from high-intensity wildfire in the watershed.

Guidelines (MA-RCA-GDL)

- 02 Water quality or habitat for aquatic and riparian-dependent species should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species should have corrective actions implemented where possible.
- 05 Post-wildfire management activities should emphasize and enhance native vegetation cover, stabilize channels, reduce erosion, and minimize adverse effects from the existing road network to protect the riparian systems.

Conservation Watersheds

Desired Conditions (MA-CW-DC)

- 01 Conservation watersheds provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of **species of conservation concern** and the recovery of threatened, endangered, proposed, or candidate species.
- 06 The drainage connections between floodplains, wetlands, upland slopes, headwaters, and tributaries are intact and provide for breeding, dispersal, overwintering, and feeding habitats for at-risk species. These areas provide refugia if other areas of the watershed are disturbed by events such as floods, landslides, and fires.

Sustainable Recreation

Guidelines (REC-FW-GDL)

- 01 When locating new recreation facilities, do not adversely affect environmentally and culturally sensitive areas, such as at-risk species breeding habitat or **at-risk plant species** habitat.
- 03 Use integrated resource planning when designing projects to address impacts to culturally sensitive areas and at-risk species habitat, and to address changing conditions in recreation settings.

All Designated Wilderness Areas

Desired Conditions (DA-WILD-DC)

- 08 National Forest System trails that access wilderness are part of a high-quality wilderness experience for visitors. National Forest System trails meet national quality standards, with minimal deferred maintenance and adhere to the national trail classification system. Trails in wilderness are located in resilient areas, and do not cause adverse impacts to at-risk species, water quality, soils, hydrologic connectivity, or cultural resources.

Animal Species of Conservation Concern Determinations

This section summarizes the key ecological conditions and risk factors for each species of conservation concern, and the plan components that mitigate those risk factors, provide for persistence, and contribute to maintaining a viable population of each species of conservation concern within the plan area.

Information on species distribution, ecological conditions, and threats is largely excerpted from the rationale documents for animal species of conservation concern (USDA 2019a, b); additional information on each species of conservation concern, the associated selection process, and full references for best available science can be found in those documents and will not be repeated here. A supporting crosswalk, providing the full language for each plan component, threats, and species grouped by key ecological conditions was developed to create this summary.

Assumptions

A core element for the development of ecosystem based desired conditions for all species, is that management actions that move ecosystem conditions toward the natural range of variation will benefit species persistence. That is, maintaining or restoring ecological conditions and functions similar to those under which native species evolved offers the best assurance against losses of biological diversity and maintains habitats for the vast majority of species in an area, and the further a habitat departs from that historical distribution, the greater the risk to viability of associated species. However, for some species this approach may not be adequate, because the historic natural range of variation is not achievable or because of risks not related to habitat. In that case, additional species-specific plan components (i.e. fine-filter provisions) were added to conserve individual species.

For many species, it is currently unknown if a truly viable population does indeed exist on the Sequoia and/or Sierra National Forests. There may be evidence of individuals, incidental sightings, or species may use the plan area for breeding and dispersal, but it is unclear if there is a breeding population that meets the definition of viable population; “[a] population of a species that continues to persist over the long term with sufficient distribution to be resilient and adaptable to stressors and likely future environments.” In these cases, without knowledge of existing viable populations, the determination outcome defaulted to being beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain viable populations of the species. In those instances, the national forest can contribute to ecological conditions that should move toward a desired condition that is within the natural range of variability. This would presumably maintain a viable population to the extent it currently exists or might exist in the future and potentially provide for populations expansion.

Table D-1 identifies species of conservation concern with unknown existing viable populations.

Table D-1. Unknown Existing Viable Populations of Species of Special Concern

National Forest	Species of Conservation Concern	Rationale for Unknown Viable Population
Sequoia/Sierra	Fringed myotis	There are no known maternity sites or documented breeding individuals since 1992 in either forest plan area. More study is needed.
Sequoia	Sierra Marten	The most recent solitary individual occurrence was in 2010, no recent den sites are known. Monitoring is limited and more study is needed.
Sequoia/Sierra	Townsend's big-eared bat	The majority of suitable Townsend's big-eared bat cave and mine roosting habitat occurs on the Giant Sequoia National Monument, outside the plan area. There are no known maternity sites in either forest plan area.
Sequoia	Great gray owl	Sequoia National Forest is at the southern extent of the species range. No known nesting sites are in the plan area.
Sequoia	Kern red-winged blackbird	Due to the difficulty in subspecies identification it is unknown if a current viable population persists in the plan area without more study.
Sequoia	Mount Pinos sooty grouse	This species is geographically restricted and may be a relict population. Due to the difficulty in subspecies identification it is unknown if a current viable population persists in the plan area without more study.
Sequoia/Sierra	Willow flycatcher	There is no current documentation of breeding willow flycatchers in the plan areas.
Sierra	Hell Hollow slender salamander	A single record exists for the Hell Hollow slender salamander on the Sierra National Forest near Merced River at the southern extent of the known range.
Sequoia	Behr's metalmark	This butterfly is rare and localized, known from relatively few populations in the Greenhorn and Piute Mountains. It is unknown if a current viable population exists.
Sequoia	Evi's Blue	This butterfly is at the northern end of its range; constrained to a small region with highly patchy distribution. It is unknown if a current viable population exists in the plan area.
Sequoia	Greenish blue	As a result of its rarity, limited distribution, and difficulty to identify, it is unknown if a viable population of this subspecies exists within the plan area.
Sequoia	Tehachapi fritillary	With loss of habitat due to recent warming trends and long-term drought, this fritillary may be extinct (Davenport, 2018). More study in the Piute Mountains is needed.
Sierra	An isopod	No recent documentation of the species in the plan area since the discovery of the species in 1981.

In addition, for some species, the Forest Service does not have sole management authority over key risk factors. For example, disease spread by animals that wander onto the forest from private landowners, upstream water diversions, human water use, widespread tree mortality, climate change, or mining activities on adjacent lands. Species of conservation concern with primary threats outside the Forest Service's authority include tricolored blackbird, willow flycatcher, foothill yellow-legged frog, limestone salamander, relictual slender salamander, yellow-blotched salamander, California golden trout, Central Valley hitch, Kern Brook lamprey, Kern River rainbow trout, Indian Yosemite snail, Merced Canyon shoulderband, and western pearlshell. Although the main threats have been determined to be outside the Forest Service's control, plan

components were still created to maintain, improve, and protect these species to the extent possible under Forest Service authority. The Forest Service would contribute to ecological conditions that improve habitat conditions and should support viability once threats outside of Forest Service control have been addressed.

Determination outcomes for species of concern were evaluated based on viable populations being able to persist in the plan areas during the life of the plans (i.e. over the next 15 years) and do not consider global or sustaining impacts, such as climate change or high-severity wildfire, outside the control of the Forest Service. These larger effects would inevitably lower many species abilities to persist over the long-term. In the case of large localized events the determination outcomes could change in the short term. For example, a high-severity fire removing all suitable habitat for a restricted range species of conservation concern would make it not within the capability of the plan area to support the species further, despite Forest Service management.

Possible Persistence Determination Outcomes

In the individual species rationales that follow, determinations for each species will have one of four possible outcomes:

1. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. No additional species-specific plan components are warranted.
2. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.
3. The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area.
4. It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the [SPECIES NAME] in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

For each wildlife species of conservation concern, key threats to persistence, the most relevant summarized plan components that alleviate those threats, and a summary of why plan components do or do not provide for viability in the plan areas are analyzed and presented in a table developed for each. Plan components have been designed to provide for viability of a species population at the plan-level, with consideration of management activities, and over the duration of the forest plans (i.e., 15 years). Plan components cannot prevent all adverse impacts to individuals of the species. Potential management approaches, which are considered additional plan content and not plan components, are included in the narratives for the species where needed. They are designed to provide guidance and strategy for improving ecological conditions for species that lack viability in the plan areas because it is either not within the inherent capability of the land or outside Forest Service management authority.

Table D-2. Key to individual analyses tables

Key Threats to Persistence Identified on the Sequoia and Sierra National Forests	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Key threats identified for Species of Conservation Concern (SCC).	Includes specific plan components that address threats or provide added emphasis/clarity. Plan component language may be paraphrased. DC = Desired Condition OBJ = Objective GOAL = Goal STD = Standard GDL = Guideline	Summarize how plan components provide the ecological conditions necessary to support species persistence and maintain a viable population of each species of conservation within the plan area.

Summary of Determination Outcomes

Table D-3 summarizes the responsible officials' determination for each of the 36 animal species of conservation concern in the Sierra and Sequoia National Forest plan areas over the life of the forest plans (i.e. 15-years). For some species, if it is unknown if an existing viable population of a species occurs within the plan area, the determination outcome defaulted to being beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain viable populations of the species. However, this does not mean that forest plan components disregard these species persistence or habitat needs. In most cases ecosystem-level components to maintain terrestrial, aquatic, and special habitats and forestwide species direction will provide the needed management to maintain or expand a local population if one exists.

Crosswalk – Animal Species of Conservation Concern

The following table is a crosswalk that shows how plan components meet species-specific habitat needs grouped by the key ecological conditions or habitat elements that species share in common. Categories are not mutually exclusive. The table does not include all plan components that provide for persistence but rather focuses on key threats and primary plan components that mitigate those threats. This ecosystem-level approach, or these coarse-filter components, provides the foundation to maintain, improve, and protect biodiversity at the landscape scale, instead of focusing on one-species management. However, where there still lies concern for the persistence of a species, additional species-specific components were created to provide clarity, address specific threats, and emphasis protection of key ecological components. More detailed information on individual species contained within groups can be found in the Rationales for Animal Species Considered for Designation as Species of Conservation Concern (United States Department of Agriculture 2019a, b).

Table D-3. Summary of Determination Outcomes for Animal Species of Conservation Concern in the Sequoia and Sierra National Forests

Species of Conservation Concern	Forest of Occurrence	Determination* 1	Determination* 2	Determination* 3	Determination* 4
Fringed myotis (<i>Myotis thysanodes</i>)	Sequoia/Sierra	-	-	-	X
Sierra Marten (<i>Martes caurina sierra</i>)	Sequoia	-	-	-	X
Sierra Marten	Sierra	-	X	-	-
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Sequoia/Sierra	-	-	-	X
American peregrine falcon (<i>Falco peregrinus anatum</i>)	Sierra	-	X	-	-
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Sequoia/Sierra	-	X	-	-
California spotted owl (<i>Strix occidentalis occidentalis</i>)	Sequoia/Sierra	-	-	X	-
Great gray owl (<i>S. nebulosa</i>)	Sequoia	-	-	-	X
Great gray owl	Sierra	-	X	-	-
Kern red-winged blackbird (<i>Agelaius phoeniceus aciculatus</i>)	Sequoia	-	-	-	X
Mount Pinos sooty grouse (<i>Dendragapus fuliginosus howardi</i>)	Sequoia	-	-	-	X
Northern Goshawk (<i>Accipiter gentilis atricapillus</i>)	Sequoia/Sierra	-	X	-	-
Tricolored blackbird (<i>Agelaius tricolor</i>)	Sequoia	-	-	-	X
Willow flycatcher (<i>Empidonax traillii brewsteri</i> and spp. <i>adastus</i>)	Sequoia/Sierra	-	-	-	X
Fairview slender salamander (<i>B. bramei</i>)	Sequoia	-	X	-	-
Foothill yellow-legged frog (<i>Rana boylei</i>)	Sequoia/Sierra	-	-	-	X
Gregarious slender salamander (<i>B. gregarius</i>)	Sierra	-	X	-	-
Hell Hollow slender salamander (<i>B. diabolicus</i>)	Sierra	-	-	-	X
Kern Canyon slender salamander (<i>B. simatus</i>)	Sequoia	-	X	-	-
Kern Plateau salamander (<i>B. robustus</i>)	Sequoia	-	-	-	X
Kings River slender salamander (<i>B. regius</i>)	Sierra	-	X	-	-
Limestone salamander (<i>Hydromantes brunus</i>)	Sierra	-	-	-	X
Relictual slender salamander (<i>B. relictus</i>)	Sequoia	-	-	-	X
Yellow-blotched salamander (<i>Ensatina eschscholtzii croceator</i>)	Sequoia	-	-	-	X
California golden trout (<i>Oncorhynchus mykiss aguabonita</i>)	Sequoia	-	-	-	X
Central Valley hitch (<i>Lavinia exilicauda exilicauda</i>)	Sequoia/Sierra	-	-	-	X
Hardhead (<i>Mylopharodon conocephalus</i>)	Sequoia/Sierra	-	X	-	-
Kern Brook lamprey (<i>Lampetra hubbsi</i>)	Sierra	-	-	-	X

Appendix D. Persistence Analysis for Species of Conservation Concern

Species of Conservation Concern	Forest of Occurrence	Determination* 1	Determination* 2	Determination* 3	Determination* 4
Kern River rainbow trout (<i>O. m. gilberti</i>)	Sequoia	-	-	-	X
Behr's metalmark (<i>Apodemia virgulti davenporti</i>)	Sequoia	-	-	-	X
Evius Blue (<i>Plebejus icarioides evius</i>)	Sequoia	-	-	-	X
Greenish blue (<i>P. saepiolus aehaja</i>)	Sequoia	-	-	-	X
Indian Yosemite snail (<i>Monadenia yosemitensis</i>)	Sierra	-	-	-	X
Merced Canyon shoulderband (<i>Helminthoglypta allynsmithi</i>)	Sierra	-	-	-	X
Tehachapi fritillary (<i>Speyeria egleis tehachapina</i>)	Sequoia	-	-	-	X
An ispod (<i>Calasellus longus</i>)	Sierra	-	-	-	X
Western pearlshell (<i>Margaritifera falcata</i>)	Sequoia	-	-	-	X

*Determination Outcomes:

- 1: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. No additional species-specific plan components are warranted.
2. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.
3. The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the [SPECIES NAME] in the plan area.
4. It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the [SPECIES NAME] in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range

Table D-4. Crosswalk of Preferred Alternative Plan Components and Species of Conservation Concern Key Ecological Conditions

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
Susceptible to Stochastic Events: All species	Landscape-level habitat diversity and connectivity.	Loss of habitat and connectivity due to low habitat resilience and departure from natural range of variation. Climate change, high-severity wildfire, widespread tree mortality, or other stochastic events.	<p>Desired Condition (TERR-FW-DC) 01 Each vegetation type is represented by a mosaic of conditions, densities, and structures. This mosaic, which occurs at a variety of scales across landscapes and watersheds, reflects conditions that provide for ecosystem integrity and diversity.</p> <p>Desired Condition (TERR-FW-DC) 02 Vegetation structure and composition provide ecosystem resilience to climate change and other stressors including altered fire regimes, drought, and flooding in riparian systems.</p> <p>Desired Condition (TERR-FW-DC) 03 Terrestrial ecosystems retain their essential processes and functions.</p> <p>Desired Condition (TERR-FW-DC) 05 Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and support the persistence of species of conservation concern.</p> <p>Desired Condition (TERR-FW-DC) 06 The landscape contains a mosaic of vegetation types and structures that provide habitat and connectivity for a variety of species including wide-ranging habitat generalists such as black bear and mule deer; more localized, semi-specialists such as ground-nesting and cavity-nesting birds and mammals; and habitat specialists such as old forest and early seral associated species.</p> <p>Desired Condition (TERR-FW-DC) 07 The carbon carrying capacity for a given ecosystem is stable or improving, given trends in climate change, fire, insects, disease, and drought.</p> <p>Desired Condition (TERR-FW-DC) 08 Fire occurs as a key ecological process in fire-adapted ecosystems where it does not pose an unacceptable risk to life and property. Fire regimes, including the frequency, extent, and severity of fire, is ecologically appropriate and enhances ecosystem resilience and habitat heterogeneity, diversity, and quality.</p> <p>Desired Condition (TERR-FW-DC) 09 Composition, density, structure, and condition of vegetation help reduce the threat of undesirable wildfires to local communities, ecosystems, and scenic character.</p> <p>Objective SQF (TERR-FW-OBJ) 01 Restore forest structure and composition on 7,500 – 12,000 acres of the montane, upper montane, and portions of the foothill landscape, using primarily mechanical treatment, within 15 years following plan approval.</p> <p>Objective SNF (TERR-FW-OBJ) 01 Restore forest structure and composition on 30,000 – 60,000 acres of the montane, upper montane, and portions of the foothill landscapes, using primarily mechanical treatment, within 15 years following plan approval.</p> <p>Objective SQF (TERR-FW-OBJ) 02 Restore low and moderate severity fire mosaics on at least 32,000 acres within 15 years following plan approval.</p> <p>Objective SNF (TERR-FW-OBJ) 02 Restore low and moderate severity fire mosaics on at least 50,000 acres within 15 years following plan approval.</p> <p>Goal (TERR-FW-GOAL) 01 Work cooperatively with researchers and other organizations to develop appropriate ecological restoration measures, especially within forest landscapes impacted by drought, bark beetle outbreaks, or uncharacteristic wildfire.</p> <p>Goal (TERR-FW-GOAL) 02 Restoration projects following large stand-replacing events (such as wildfire, drought, and bark beetle outbreaks) in forest landscapes should be designed to consider:</p> <ol style="list-style-type: none"> safety to people; the development of restoration strategies that move current landscape conditions towards ecosystem desired conditions; fuel loads and the need to restore natural fire regimes to the recovering landscape; wildlife habitat, including the restoration of habitat for forest-dependent species; opportunities to increase carbon storage and sequestration; future projections in climate and their influence on ecosystems in the affected area; long-term maintenance of regional biodiversity; and opportunities to recover economic value as a harvested wood product from dead and dying trees. <p>Goal (TERR-FW-GOAL) 03 Work cooperatively with federal and state agencies and other partners to restore low to moderate severity fire to the landscape.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
<i>Same as above.</i>	<i>Same as above.</i>	<i>Same as above.</i>	<p>Guideline (TERR-FW-GDL) 03 Management activities that generate accumulations of green slash should minimize potential impacts from bark beetles.</p> <p>[All TERR plan components specific to Blue Oak (BLU), Chaparral-Live Oak (CHAP), all Montane Vegetation Types (MONT), Black Oak/Canyon Live Oak (OAK), Ponderosa Pine (POND), Dry Mixed Conifer (DMC), Moist Mixed Conifer (MMC), All Upper Montane Vegetation Types (UPPR), Red Fir (RFIR), Lodgepole Pine (LDGP), Jeffery Pine (JEFF), Montane Chaparral (MCHP), Subalpine and Alpine (ALPN), Pinyon-Juniper (PINY), Sagebrush (SAGE), Xeric Shrub (XER), Aspen (ASPN), and McKinley and Nelder Giant Sequoia Grove Management Area (GSG).]</p> <p>Desired Condition (FIRE-FW-DC) 02 Fire management activities reduce fuel buildup, help maintain and protect habitat for a variety of species, reduce smoke from larger fires, provide added protection for communities, and restore fire on the landscape. These actions are also an integral part of achieving sustainable recreation, particularly by maintaining scenic attractiveness, integrity, and character.</p> <p>Desired Condition (FIRE-FW-DC) 04 Wildland fires burn with a range of intensity, severity and frequency that allow ecosystems to function in a healthy and sustainable manner. Wildland fire is understood as a necessary process, integral to the sustainability of fire-adapted ecosystems and is used as an effective restoration tool (see TERR-FW-DC related to fire). The landscape is strategically compartmentalized by treated areas and natural features, which facilitates use of prescribed fire and wildfire to meet resource objectives for protecting values and resources.</p>
Forest Dependent: Sierra marten, fringed myotis, great gray owl, northern goshawk, California spotted owl, Mount Pinos sooty grouse	Blocks of contiguous and connected, resilient forest habitat.	Loss of habitat from high-severity wildfire, forest management treatments, climate change, drought, insect and disease outbreaks.	<p>Desired Condition (TERR-FW-DC) 04 Native insect and disease populations are generally limited with occasional outbreaks. Vegetation structural diversity and resilience minimizes the scale of insect and disease outbreaks.</p> <p>Guideline (TERR-FW-GDL) 01 Projects facilitate increasing heterogeneity at all scales, from tree clumps to large landscapes. Several treatment strategies can be employed: using landscape topography (slope, aspect, and slope position) to vary stand densities; promoting tree clumps and gaps within a stand, increasing the proportion of large to small trees; retaining important habitat structures such as large trees, snags, and trees with broken tops; and increasing diversity by promoting hardwoods, pines and native plant species. <i>Exceptions: does not apply to community buffers</i></p> <p>Guideline (TERR-FW-GDL) 04 Mechanical vegetation treatments and salvage operations should retain all large hardwoods, greater than 12 inches in diameter (8 inches for blue oak), except where they pose a threat to human life or property or as needed for operability. <i>Exceptions: does not apply to community buffers and does not apply to CWPZ where there is no overlap with the WHMA</i></p> <p>Guideline (TERR-FW-GDL) 05 Burn prescriptions should be designed and implemented to minimize loss of large hardwoods greater than 12 inches in diameter (8 inches for blue oak). Specifically minimize losses on black oaks greater than 20 inches in diameter.</p> <p>Desired Condition (TIMB-FW-DC) 03 Salvage, including sanitation cutting, of dead and dying trees captures as much of the economic value and carbon storage capacity of the wood as possible while retaining key features in quantities that provide for wildlife habitat, soil productivity and ecosystem functions, consistent with restoring the landscape towards desired conditions.</p> <p>Standard (TIMB-FW-STD) 01 Following regulated regeneration harvest (such as group selection) on lands identified as suitable for timber production, create and maintain planting environments that favor seedling survival and rapid growth rates. Facilitate early and periodic use of fire to reduce future wildfire-related mortality, and provide sufficient tree numbers to meet future vegetation desired conditions that support a variety of ecosystem services and resilience, including forest products, wildlife habitat and carbon storage. A site-specific silvicultural prescription will be designed to ensure that lands are adequately restocked within 5 years of a regeneration harvest.</p> <p>Guideline (TIMB-FW-GDL) 02 Reforestation of suitable lands should be designed to achieve stocking levels, spatial arrangements and species composition to facilitate future vegetation desired conditions that allow for long-term resilience of the developing forest, while considering potential future plantation management, carbon carrying capacity, wildlife habitat and climate change adaptation. Competing vegetation, fuel levels, and fire risk should be managed to provide for the long-term survival and vigor of reestablishing forests as they move toward maturity.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
<i>Same as above.</i>	<i>Same as above.</i>	<i>Same as above.</i>	Guideline (TIMB-FW-GDL) 03 On lands not suited for timber production, reforestation of deforested lands should contribute to ecological restoration of desired vegetation conditions, to provide benefits such as improved scenic character, wildlife habitat, carbon storage, and watershed condition.
Large Tree/Snag Dependent: Sierra Marten, California spotted owl, northern goshawk, great gray owl, fringed myotis, Mount Pinos sooty grouse, and bald eagle.	Large trees and snags, cavities, downed logs, woody debris, roosting/nesting/ denning structures.	Fire salvage, hazard tree removal, timber harvest, mechanical thinning, high-severity wildfires.	<p>Standard (TERR-FW-STD) 01 Retain conifer trees greater than 30 inches in diameter except when public or firefighter safety is threatened or one of the conditions below are met:</p> <ol style="list-style-type: none"> When required for equipment operability, individual trees less than 35 inches in diameter may be removed. Outside of occupied California spotted owl territories, trees greater than 30 inches but less than 40 inches in diameter may be removed, felled for coarse woody debris, or girdled for snag creation under the following circumstances: <ol style="list-style-type: none"> When removing trees is needed for aspen, oak, or meadow restoration treatments or for cultural or Tribal importance; In overly dense stands to favor retention or promote the growth of even larger or older shade-intolerant trees to more effectively meet tree species composition and forest structure restoration goals; or To promote the establishment, growth, and development of shade-intolerant species by creating small gaps (generally less than 0.5 acres) in stands historically dominated by shade-intolerant species. <p>Guideline (TERR-FW-GDL) 02 Mechanical vegetation treatments within forested habitats should include a widely distributed but often clumped distribution of snags and downed logs. Along forest edges and within groups and clumps of large trees, snags and downed logs should be retained to provide habitat and roost sites for wildlife species such as small mammals, cavity-nesting birds, and tree-dwelling bats. <i>Exceptions: does not apply to community buffers</i></p> <p>Guideline (TERR-FW-GDL) 06 Design vegetation treatments to maintain or enhance special habitat features.</p> <p>Desired Condition (TERR-OAK-DC) 01 Oak trees, snags, and down logs provide habitat for a variety of wildlife species. Oak snags and live trees with dead limbs, hollow boles, and cavities provide shelter, and resting and nesting habitat. Acorns are plentiful, provide food for wildlife, and are available for traditional cultural uses.</p> <p>Desired Condition (TERR-POND-DC) 05 At the mid- to fine scale, snags greater than 20 inches in diameter are patchily distributed and highly irregular in spacing, with 2 to 40 snags per 10 acres at the landscape scale (see forest plan) providing for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is patchily distributed and ranges from 1 to 10 tons per acre at the landscape scale (see forest plan).</p> <p>Desired Condition (TERR-DMC-DC) 05 At the mid- to fine scale, snags greater than 20 inches in diameter are well distributed and highly irregular in spacing, with densities between 2 to 40 snags per 10 acres at the landscape scale (see forest plan) providing for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is irregularly distributed and ranges from 1 to 10 tons per acre at the landscape scale. Litter and surface fuel is patchy with fewer than 3 to 10 tons per acre in fuel loading on average over 30 to 70 percent of the area. There are some small areas of up to 30 tons per acre and others with fewer than 3 tons per acre.</p> <p>Desired Condition (TERR-MMC-DC) 05 At the mid- to fine scale, large snags greater than 20 inches in diameter are patchily distributed, averaging 5 to 40 snags per 10 acres at the landscape scale (see forest plan) providing for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is patchily distributed and averages fewer than 5 tons per acre at the landscape scale (see forest plan). In patches centered on areas of past tree mortality, coarse woody debris can be up to 10 tons per acre. Litter and surface fuel is patchy, with fewer than 3 to 15 tons per acre in fuel loading on average over 30 to 70 percent of the area.</p> <p>Desired Condition (TERR-RFIR-DC) 07 At the mid- to fine scale, snags greater than 20 inches in diameter are distributed in patches. An average of 5 to 40 snags per 10 acres provide for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is distributed in patches and ranges from 1 to 10 tons per acre. Litter and surface fuel is patchy with fewer than 5 to 20 tons per acre in fuel loading on average. There may be areas with no fuels and pockets of high fuel accumulation scattered irregularly.</p> <p>Desired Condition (TERR-LDGP-DC) 05 In wet lodgepole pine forests, large snag densities are between 5 and 40 snags per 10 acres. Snags are well distributed, highly irregular in spacing, and provide for future downed logs. Coarse woody debris, including large downed logs in varying states of decay, is well distributed but irregular in spacing and ranges from 1 to 20 tons per acre. Some small areas contain very high fuel loading of up to 30 tons per acre and other areas have fewer than 5 tons per acre.</p> <p>Desired Condition (TERR-LDGP-DC) 10 In dry lodgepole pine forests, large snag densities are between 2 to 25 snags per 10 acres. Snags are well distributed, highly irregular in spacing, and provide for future downed logs. Coarse woody debris, including large</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
<i>Same as above.</i>	<i>Same as above.</i>	<i>Same as above.</i>	<p>downed logs in varying states of decay, is well distributed but highly irregular in spacing, ranging from 1 to 10 tons per acre. Surface fuel loads are highly variable and patchy. Some small areas contain higher fuel loading of up to 15 tons per acre and most areas have fewer than 8 tons per acre.</p> <p>Guideline (FIRE-FW-GDL) 07 When safe and feasible, protect highly valued old, den and nest trees ahead of burn operations using techniques such as targeted burning, removing fuel from the base of trees, and providing direct protection.</p>
Old Growth Dependent: Sierra marten, California spotted owl, and great gray owl.	Old growth components.	Loss of habitat from timber harvest, removal for fire protection, hazard tree removal, mechanical thinning, high-severity wildfires, widespread tree mortality, climate change.	<p>Desired Condition (TERR-OLD-DC) 01 The composition, structure, and functions of old forests and surrounding landscapes are resilient to fire, drought, insects, pathogens, and climate change. Fire occurs as a key ecological process in forest types that are adapted to fire, creating, restoring and maintaining ecosystem resilience and fire-related composition and structure.</p> <p>Desired Condition (TERR-OLD-DC) 02 The landscape contains a mosaic of vegetation types and structures that provide foraging and breeding habitat, movement, and connectivity for a variety of old forest-associated species.</p> <p>Desired Condition (TERR-OLD-DC) 03 Between 40 and 80 percent of the forested landscape contains old forest areas. Old forest areas are clumps and patches of old forest components such as old trees, snags, and large downed logs. These areas are irregularly distributed across the landscape and interspersed with stands of younger trees, shrubs, meadows, other herbaceous vegetation, and unvegetated patches.</p> <p>Desired Condition (TERR-OLD-DC) 04 The number and density of old trees vary by topographic position and soil moisture. In general, more large and old trees are found on moister sites; on lower slopes, bottoms, and north and east aspects, especially where soils are deeper. Large trees are well distributed but are often clumpy. The densities vary by forest type as shown in. Trees greater than 40 inches in diameter, generally over 150 years old, represent the oldest trees, and comprise a significant proportion of large and old trees. In many areas of high soil productivity, trees grow to large sizes (around 30 inches in diameter) in fewer than 100 years. On low and very low soil productivity sites, the oldest trees may be smaller in diameter. Sufficient numbers of younger trees are present to provide for recruitment of old trees over time.</p> <p>Desired Condition (TERR-OLD-DC) 05 Old forests are composed of both vigorous trees and decadent trees. Clumps of large trees, snags, large logs, and decadent older trees are maintained on the landscape in sufficient numbers to benefit wildlife and are distributed throughout the planning area, considering constraints imposed by climate change, fire, insects, disease, and drought.</p> <p>Desired Condition (TERR-OLD-DC) 06 Large snags are scattered across the landscape, generally occurring in clumps rather than uniformly and evenly distributed, meeting the needs of species that use snags and providing for future downed logs.</p> <p>Desired Condition (TERR-OLD-DC) 07 Coarse woody debris is distributed in patches and the density of large downed logs varies by vegetation type. Surface dead wood levels are sufficient to provide for wildlife and legacy soil microbial populations.</p> <p>Guideline (TERR-OLD-GDL) 01 When large tree densities meet desired condition levels, thinning to increase heterogeneity and resilience should emphasize retention of the oldest and largest trees, especially pines and black oaks. Large trees with deformities, broken tops, large branches, and cavities should be retained for wildlife habitat whenever possible.</p> <p><i>Exceptions: does not apply to community buffers where there is no overlap with WHMA does not apply to CWPZ where there is no overlap the WHMA</i></p> <p>Guideline (TERR-OLD-GDL) 02 Firing patterns, burn unit layout, and other firing and holding methods during burning should limit the killing of large old trees and loss of very large snags. Consider preventing delayed tree mortality caused by smoldering at the base of large old trees and consider constructing fireline around large old trees and very large snags to reduce the risk of tree ignition while addressing firefighter safety. Limit fire intensity in areas with large old trees and very large snags where possible. <i>Exceptions: does not apply to community buffers where there is no overlap with WHMA</i></p> <p>Desired Condition (MA-WHMA-DC) 01 The Wildlife Habitat Management Area consists of resilient, well-distributed, well-connected ecosystems that provide sustainable habitat for old-forest associated species, including California spotted owl.</p> <p>Desired Condition (MA-WHMA-DC) 02 The Wildlife Habitat Management Area is characterized by higher concentrations of old forest. It includes some multi-storied canopy conditions, including some shade-tolerant understory trees such as firs and cedars, especially in drainages, swales and canyon bottoms and on north and east-facing slopes.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
Complex Early Seral Habitat Dependent: Sierra marten, California spotted owl, and great gray owl.	Snags and logs, intermixed with newly re-sprouted or recently regenerated trees, shrubs, herbs and grasses to support prey.	Salvage of deadwood, recurring wildfires, removal of hazard trees.	<p>Desired Condition (TERR-CES-DC) 01 Complex early seral habitat contains a sufficient abundance and distribution of snags (especially large-diameter snags) for cavity-nesting wildlife, variable densities of native shrubs and herbaceous plants, and resprouting oak and aspen where they occur. <i>Exceptions: Does not apply to community buffers where there is no overlap with WHMA. Does not apply to CWPZ where there is no overlap the WHMA.</i></p> <p>Desired Condition (TERR-CES-DC) 02 Snags, logs, and live trees are widely and variably distributed where vegetation has been severely burned (greater than 75 percent mortality) in large patches (greater than 100 acres) to provide habitat while also considering the need for other resource objectives. Such resource objectives could include removal of hazard or salvage trees, reforestation to contribute to future forested conditions and carbon carrying capacity, and strategic fuel treatment, including management of fuels in and adjacent to community wildfire protection zones. <i>Exceptions: Does not apply to community buffers where there is no overlap with WHMA. Does not apply to CWPZ where there is no overlap the WHMA.</i></p> <p>Guideline (TERR-CES-GDL) 01 Post-disturbance restoration projects should be designed to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover.</p> <p>Guideline (TERR-CES-GDL) 02 Post-disturbance restoration projects should be designed to protect and restore important wildlife habitat.</p> <p>Guideline (TERR-CES-GDL) 03 Post-disturbance restoration projects should be designed to manage the development of fuel profiles over time.</p> <p>Guideline (TERR-CES-GDL) 04 Post-disturbance restoration projects should be designed to recover the value of timber killed or severely injured by the disturbance.</p> <p>Guideline (TERR-CES-GDL) 05 Large fires with more than 1,000 acres of contiguous blocks of high vegetation burn severity in forest vegetation types (ponderosa pine, Jeffery pine, dry or mesic mixed conifer, and red fir) should retain at least 10 percent of the high vegetation burn severity area without harvest to provide areas of complex early seral habitat. <i>Exceptions: Does not apply to community buffers where there is no overlap with WHMA. Does not apply to CWPZ where there is no overlap the WHMA.</i></p>
Riparian/ Water Dependent: Bats, bald eagle, Kern red-winged blackbird, tricolored blackbird, willow flycatcher, foothill yellow-legged frog, salamanders, fish, butterflies, and aquatic invertebrates	Riparian and water ecosystems	Loss or degradation of habitat due to vegetation treatments, conifer encroachment, livestock grazing, water quality degradation, flow alterations, and channel modifications.	<p>Desired Condition (WTR-FW-DC) 01 Adequate quantity and timing of water flows support ecological structure and functions, including aquatic species diversity and riparian vegetation. Watersheds are resilient to changes in air temperatures, snowpack, timing of runoff, and other effects of climate change.</p> <p>Desired Condition (WTR-FW-DC) 02 Water quality supports State-designated beneficial uses of water. Water quality is sustained at a level that retains the biological, physical, and chemical integrity of aquatic systems and benefits the survival, growth, reproduction, and migration of native aquatic and riparian species.</p> <p>Desired Condition (WTR-FW-DC) 03 Watersheds are fully functioning or trending toward fully functioning and resilient; recover from natural and human disturbances at a rate appropriate with the capability of the site; and have a high degree of hydrologic connectivity laterally across the floodplain and valley bottom and vertically between surface and subsurface flows. Physical (geomorphic, hydrologic) connectivity and associated surface processes (such as runoff, flooding, in-stream flow regime, erosion, and sedimentation) are maintained and restored. Watersheds provide important ecosystem services such as high-quality water, recharge of streams and shallow groundwater, and maintenance of riparian communities. Watersheds sustain long-term soil productivity.</p> <p>Desired Condition (WTR-FW-DC) 04 Soil and vegetation functions in upland and riparian areas are sustained and resilient. Healthy soils provide the base for resilient landscapes and nutritive forage for browsing and grazing animals, and support timber production. Healthy upland and riparian areas support healthy fish and wildlife populations, enhance recreation opportunities, and maintain water quality.</p> <p>Desired Condition (WTR-FW-DC) 05 Infrastructure (administrative sites, recreation facilities, and roads) has minimal adverse effects to riparian and aquatic resources.</p> <p>Objective (WTR-FW-OBJ) 01 At least 2 Priority watersheds will experience improvements allowing them to shift to a higher functioning condition class, as defined by the national Watershed Condition Framework, within 15 years of plan approval.</p> <p>Standard (WTR-FW-STD) 01 Use best management practices as described in agency technical guides and handbooks to mitigate adverse impacts to soil and water resources during the planning and implementation of forest management activities.</p>

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Same as above.	Same as above.	Same as above.	<p>Standard (WTR-FW-STD) 02 Restoration projects will not result in long-term degradation of aquatic and riparian conditions, including connectivity, at the watershed or subwatershed scale. Adverse effects from project activities are acceptable when they are short-term, site-scale, and support, or do not diminish, long-term recovery of aquatic and riparian resources.</p> <p>Standard (WTR-FW-STD) 03 For exempt hydroelectric facilities on National Forest System lands, ensure that special use permit language provides adequate in-stream flow requirements to maintain, restore, or recover favorable ecological conditions for local riparian- and aquatic-dependent species.</p> <p>Standard (WTR-FW-STD) 04 After restoration actions (including soil disturbance or seeding activities), limit subsequent soil-disturbing management activities until project objectives have been met.</p> <p>Standard SQF (WTR-FW-STD) 05 Restore the watershed, through thinning, restoration of floodplain connectivity and shallow groundwater storage, to enhance instream flows.</p> <p>Guideline (WTR-FW-GDL) 01 To secure instream flows needed to maintain, recover, and restore riparian resources, channel conditions, and aquatic habitat, cooperation with Federal, Tribal, State and local governments should occur during all basic Federal Energy Regulatory Commission, State and other authorized water use and water rights planning and relicensing on the national forests.</p> <p>Goals (WTR-FW-GOAL) 01 Coordinate with Tribes; local, State, and Federal agencies; adjacent landowners; and other interested parties on watershed restoration across ownership boundaries.</p> <p>Goals (WTR-FW-GOAL) 02 Take a landscape- or watershed-scale approach to restoring aquatic and riparian ecosystems, integrating with recreation, range management, fuels, and vegetation management to efficiently use limited resources, including partnerships, and to effectively address climate change.</p> <p>Desired Condition (WTR-RCA-DC) 01 The connections of floodplains, channels, and water tables distribute flood flows and sustain diverse habitats</p> <p>Desired Condition SQF (WTR-RCA-DC) 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native aquatic and riparian-dependent plant and animal species.</p> <p>Desired Condition SNF (WTR-RCA-DC) 02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native and nonnative aquatic and riparian-dependent plant and animal species.</p> <p>Desired Condition (WTR-RCA-DC) 03 The distribution and health of biotic communities in special aquatic habitats perpetuates their unique functions and biological diversity.</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition (WTR-RCA-DC) 05 Riparian areas provide a range of substrates to sustain habitat for a variety of aquatic and terrestrial fauna within their natural capacity of the system.</p>

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Same as above.	Same as above.	Same as above.	<p>Desired Condition (WTR-RCA-DC) 06 Soil structure and function is sustained to infiltrate and disperse water properly, withstand erosive forces, sustain favorable conditions of stream flow, and cycle nutrients. Associated water tables support riparian vegetation and restrict nonriparian vegetation.</p> <p>Desired Condition (WTR-RCA-DC) 07 Key riparian processes and conditions (including slope stability and associated vegetation root strength, wood delivery to streams and floodplains, input of leaf and organic matter to aquatic and terrestrial systems, solar shading, microclimate, and water quality) operate consistently with local disturbance regimes.</p> <p>Desired Condition (WTR-RCA-DC) 08 The condition of riparian vegetation, including riparian species composition, stand density, and fuel loading, is consistent with healthy riparian systems and reduces risks from high-intensity wildfire in the watershed.</p> <p>Desired Condition (WTR-RCA-C) 09 Riparian areas in frequent fire landscapes (such as montane areas) have low- to moderate-severity fire restored as an ecological process. Fire effects occur in a mosaic and supports restoration of ecological integrity, including ecosystem function, composition, structure, and resilience.</p> <p>Desired Condition (WTR-RCA-DC) 10 New introductions of invasive species are prevented. Where invasive species are adversely affecting the persistence of native species, the appropriate State and Federal wildlife agencies work to reduce impacts of invasive species to native populations.</p> <p>Desired Condition (WTR-RCA-DC) 11 Along all State-designated Wild and Heritage Trout waters, streamside vegetation provides stream shading and fish cover, based on capability of the site.</p> <p>Desired Condition (WTR-RCA-DC) 12 Spatial and temporal connectivity for riparian- and aquatic-dependent species is maintained within and between watersheds. Connectivity provides physically, chemically and biologically unobstructed movement for species survival, migration, and reproduction.</p> <p>Desired Condition (WTR-RCA-DC) 13 Native riparian vegetation is diverse, structurally complex, and provides food and cover to sustain fish and wildlife populations.</p> <p>Objective (WTR-RCA-OBJ) 01 Restore the structure and composition of at least 400 acres in riparian areas within 15 years following plan approval, emphasizing riparian areas that face the most risk from large-scale high-intensity fire, past fire exclusion, or accelerated flooding events associated with climate change.</p> <p>Standard (WTR-RCA-STD) 01 Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.</p> <p>Standard (WTR-RCA- STD) 02 Limit pesticide applications to cases where project-level analysis indicates pesticide applications are consistent with riparian conservation area desired conditions.</p> <p>Standard (WTR-RCA- STD) 03 Prohibit storage of fuels and other toxic materials except at designated administrative sites and sites covered by special use authorization. Prohibit refueling within riparian conservation areas except when there are no other reasonable alternatives.</p> <p>Standard (WTR-RCA- STD) 04 Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species, except where desired to protect native species.</p> <p>Standard (WTR-RCA- STD) 05 All new or replaced permanent stream crossings shall accommodate at least the 100-year flood, its bedload, and debris. Estimates for 100-year flood potential will reflect the best available science regarding potential effects of climate change.</p> <p>Standard (WTR-RCA- STD) 06 Locate water drafting sites to minimize adverse effects to instream flows and depletion of pool habitat.</p> <p>Standard (WTR-RCA-STD) 07 Prevent disturbance to streambanks and shorelines of lakes and ponds caused by resource activities (such as livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of the stream reach, or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard may not be met within Destination Recreation Management Areas, and sites authorized under special use permits, but activities will be designed and managed to reduce the percent of impact to the extent feasible.</p>

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Same as above.	Same as above.	Same as above.	<p>Standard (WTR-RCA-STD) 08 In fen ecosystems, limit disturbance from livestock and packstock to no more than 20 percent annually. Reduce disturbance further if a fen is nonfunctional or functional at-risk with a downward trend.</p> <p>Standard (WTR-RCA-STD) 09 Use screening devices for water drafting pumps. (Fire suppression activities are exempt during initial attack.) Use pumps with low entry velocity to minimize removal of aquatic species from aquatic habitats, including juvenile fish, amphibian egg masses, and tadpoles.</p> <p>Standard (WTR-RCA-STD) 10 Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems.</p> <p>Standard (WTR-RCA-STD) 11 Prevent activities from causing significant degradation of fens from trampling, such as by livestock, packstock, wheeled vehicles, and people.</p> <p>Standard (WTR-RCA-STD) 12 Assess the hydrologic function of riparian areas, meadows, fens, and other special aquatic features during rangeland management analysis. Ensure that characteristics of special features are, at a minimum, at proper functioning condition or functioning at-risk and trending toward proper functioning condition, as defined in appropriate technical report. If systems are functioning at-risk, assess appropriate actions to move towards proper functioning condition.</p> <p>Standard (WTR-RCA-STD) 13 Complete initial inventories of fens within active grazing allotments prior to completing the allotment environmental analysis. If there are more than 10 fens in an allotment, complete initial inventories of at least 25 percent of all the fens in the allotment, and establish a 5-year schedule to complete inventory of the remaining fens in the allotment.</p> <p>Standard (WTR-RCA-STD) 14 Limit construction of new skid trails or temporary roads for access into riparian conservation areas unless it is the only feasible option to conduct restoration activities for improvement of riparian conservation areas. When conducting restoration activities for protection or improvement of riparian conservation areas, best management practices for erosion must be followed to prevent soil loss.</p> <p>Standard (WTR-RCA-STD) 15 Designate equipment exclusion zones within riparian conservation areas when designing projects. The exclusion zone width is within 150 feet of perennial streams, meadows springs, and seeps; and 75 feet for intermittent streams. These widths will increase as slope increases, or if soils are unstable. Adjustments will be made only after consultation with experts in soils, hydrology, fisheries, and/or aquatic ecology. Any project, occurring within the exclusions zone will repair any damage, including stabilizing soils.</p> <p>Guideline (WTR-RCA-GDL) 01 See also MA-CWPZ-STD 01. Hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features should be maintained and restored. Roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths should have corrective actions implemented where possible to restore connectivity.</p> <p>Guideline (WTR-RCA-GDL) 02 Water quality or habitat for aquatic and riparian-dependent species should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species should have corrective actions implemented where possible.</p> <p>Guidelines (WTR-RCA-GDL) 03 When vegetation is treated in near-river or stream areas, coarse wood should be considered as an addition to the streams to enhance habitat, where possible.</p> <p>Guidelines (WTR-RCA-GDL) 04 To limit soil disturbance in riparian conservation areas, activities should use methods that limit soil disturbance to less than 20 percent (such as low ground pressure equipment, helicopters, over-snow logging, extra ground cover requirements, or other non-ground disturbing actions) to achieve desired conditions consistent with best management practices and plan direction.</p> <p>Guideline (WTR-RCA-GDL) 05 Post-wildfire management activities should emphasize and enhance native vegetation cover, stabilize channels, reduce erosion, and minimize adverse effects from the existing road network to protect the riparian systems.</p> <p>Guideline (WTR-RCA-GDL) 06 To improve water quality or habitat for aquatic and riparian-dependent species, evaluate the impacts of facilities on riparian conservation areas when reissuing permits for livestock. If impacts are found, existing livestock facilities should be located outside of meadows and riparian areas.</p>

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Same as above.	Same as above.	Same as above.	<p>Guideline (WTR-RCA-GDL) 07 Wildfire control methods and activities that would impact the riparian conservation area (in particular dozer-built lines) should not be used unless alternative control methods are not safe or practical. If dozers are used, the lines should be repaired during suppression repair.</p> <p>Guideline SQF (WTR-RCA-GDL) 08 Stream reaches of all State-designated wild and heritage trout waters (designated as of October 2017) should be managed according to the following: Any activity that results in trampling and chiseling should not exceed 10 percent of any given stream reach to reduce sedimentation into wild trout or heritage waters.</p> <p>Guideline SNF (WTR-RCA-GDL) 08 Stream reaches of all State-designated wild trout waters (designated as of October 2017) should be managed according to the following: Any activity that results in trampling and chiseling should not exceed 20 percent of any given stream reach to reduce sedimentation into wild trout waters. A reach is defined as a continuous portion of a stream with homogeneous physical characteristics.</p> <p>Guideline (WTR-RCA-GDL) 09 To protect soils and streams from sedimentation soils and subsequent erosion, mechanical exclusion zones of 25 feet on either side of an ephemeral stream with structure should be designated. The necessity of increasing buffers on these headwater streams with structure should be analyzed by specialists in soils, hydrology, aquatics, and/or fisheries where slope, aspect, recent fires, soil conditions, or species occupancy raise concerns.</p> <p>Guideline (WTR-RCA-GDL) 10 To protect water quality and species habitats; unstable streambanks should be restored to attain a streambank system that is no more than 10 percent unstable of the reach's current potential.</p> <p>Guideline (WTR-RCA-GDL) 11 To protect water quality and spawning habitat, stream-modifying construction activities within or immediately adjacent to the aquatic zone should be limited to when stream flows are the lowest.</p> <p>Goal (WTR-RCA-GOAL) 01 Coordinate and collaborate with the State fish and wildlife agencies to address native aquatic species issues, including evaluating management and monitoring needs to address aquatic species requirements</p> <p>Goal (WTR-RCA-GOAL) 02 Where aquatic invasive species are adversely affecting the persistence of aquatic native species, work with the appropriate State and Federal wildlife agencies work to reduce impacts of aquatic invasive species to native populations.</p> <p>Desired Condition (RCA-RIV-DC) 01 Stream ecosystems, riparian corridors, and associated stream courses sustain ecosystem structure; are resilient to natural disturbances (such as flooding) and climate change; promote the natural movement of water, sediment and woody debris; and provide habitat for native aquatic species or desirable nonnative species.</p> <p>Desired Condition (RCA-RIV-DC) 02 Stream ecosystems, including ephemeral watercourses, exhibit full connectivity where feasible to maintain aquatic species diversity, except where barriers are maintained in good condition to protect native aquatic species. Ephemeral watercourses provide for dispersal, access to new habitats, perpetuation of genetic diversity, and nesting and foraging habitat for riparian and aquatic species.</p> <p>Desired Condition (RCA-RIV-DC) 03 Instream flows are sufficient to sustain desired conditions of riparian, aquatic, wetland, and meadow habitats and retain patterns of sediment, nutrients, and wood routing as close as possible to those with which aquatic and riparian biota evolved. The physical structure and condition of streambanks and shorelines minimize erosion and sustain desired habitat diversity.</p> <p>Desired Condition (RCA-RIV-DC) 04 Streams and rivers maintain seasonal water flow over time, including periodic flooding, which promotes natural movement of water, sediment, nutrients, and woody debris. Flooding creates a mix of stream substrates for fish habitat, including clean gravels for fish spawning, large wood structures, and sites for riparian vegetation to germinate and establish.</p> <p>Desired Condition (RCA-RIV-DC) 05 Stream channel conditions exhibit a sediment regime under which aquatic and riparian ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport. The sediment regime should be similar to the natural distribution of reference conditions.</p> <p>Desired Condition (RCA-RIV-DC) 06 Within rivers and streams, the level of coarse large woody debris is within the natural range of variation.</p> <p>Objective SQF (RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 5 stream miles over a 15-year period.</p>

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Same as above.	Same as above.	Same as above.	<p>Objective SNF (RCA-RIV-OBJ) 01 Enhance or restore the structure, composition, or function of habitat for fisheries and other aquatic species along at least 5 stream miles over a 15-year period</p> <p>Objective (RCA-RIV-OBJ) 02 Eliminate or mitigate at least one priority barrier to aquatic organism passage or ecological connectivity within 15 years following plan approval.</p> <p>Desired Condition (MA-WHMA-DC) 03 The Wildlife Habitat Management Area complements aquatic and riparian areas and wilderness areas to provide habitat connectivity.</p> <p>Standard (RANG-FW-STD) 02 During allotment management planning, livestock handling facilities, stock driveways in riparian areas will be placed to meet riparian conservation area, watershed or water quality standards and guidelines.</p> <p>Standard (RANG-FW-STD) 03 Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are at a minimum proper functioning condition or functioning at-risk with an upward trend, as defined in the appropriate technical reports.</p>
Seeps/Springs Dependent: Bats, foothill yellow-legged frog, salamanders, butterflies, and an isopod.	Slow moving water, Cold spring water sources with perennial flow	Loss and degradation including reduced water levels and quality.	<p>Desired Condition (RCA-SPR-DC) 01 Springs provide sufficient water to maintain healthy habitats for native riparian and aquatic species.</p> <p>Desired Condition (RCA-SPR-DC) 02 Springs are resilient to natural disturbances, groundwater diversions, and changing climate conditions. Springs function across the landscape within their type and water availability.</p> <p>Desired Condition (RCA-SPR-DC) 03 Springs and associated streams and wetlands have the necessary soil, water, and vegetation attributes to be healthy and functioning at or near potential. Water flow is similar to historic levels and persists over time, within constraints of climate change.</p> <p>Goal (RANG-FW-Goal) 02 Work with stakeholders ensures livestock grazing management strategies minimize negative effects to the structure and function of vegetation and aquatic and riparian ecosystems, especially for small-scale special aquatic features such as fens and springs, as well as habitat and refugia for at-risk species.</p>
Wet/Riparian Meadow Dependent: Bats, Sierra marten, Kern red-winged blackbird, tricolored blackbird, northern goshawk, great gray owl, willow flycatcher, foothill yellow-legged frog, salamanders, butterflies, and aquatic invertebrates.	Dense thickets of shrubby vegetation, structural heterogeneity, perennial water source. Perennially wet marshes and wet meadows near springs, seeps and riparian areas where host plant species may occur.	Loss and degradation including reduced water levels and quality, conifer encroachment, invasive species.	<p>Desired Condition (RCA-MEAD-DC) 01 Meadows are hydrologically functional. Sites of accelerated erosion, such as gullies and head cuts are stabilized, recovering, or within the natural range of variation. Vegetation roots occur throughout the available soil profile. Meadows with perennial and intermittent streams have the following characteristics: (1) stream energy from high flows is dissipated, reducing erosion and improving water quality; (2) streams filter sediment and capture bedload, aiding floodplain development; (3) meadow conditions enhance floodwater retention and groundwater recharge; and (4) root masses stabilize streambanks against cutting action.</p> <p>Desired Condition (RCA-MEAD-DC) 02 Wetlands and groundwater-dependent ecosystems (including springs, seeps, fens, wet meadows, and associated wetlands or riparian systems) support stable herbaceous and woody vegetation communities that are resilient to drought, climate change, and other stressors. Root masses stabilize stream channels, shorelines, and soil surfaces. The natural hydrologic, hydraulic, and geomorphic processes in these ecosystems sustain their unique functions and biological diversity.</p> <p>Desired Condition (RCA-MEAD-DC) 03 Meadows are resilient and recover rapidly from natural and human disturbances. They exhibit a high degree of hydrologic connectivity laterally across the floodplain and vertically between surface and subsurface flows. They provide important ecosystem services such as high-quality water, recharge of streams and aquifers, and moderation of climate variability and change.</p> <p>Desired Condition (RCA-MEAD-DC) 04 Soils in wet and headwater meadows are influenced by a shallow water table and function to filter water. These soils also store and release water over an extended period of time, which helps to maintain streamflow during dry summer months.</p> <p>Desired Condition (RCA-MEAD-DC) 05 Meadows have substantive ground cover and a rich and diverse species composition, especially of grasses and forbs. Meadows have high plant functional diversity with multiple successional functional types represented. Perennial streams in meadows contain a diversity of age classes of shrubs along the streambank, where the potential exists for these plants.</p>

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Same as above.	Same as above.	Same as above.	<p>Desired Condition (RCA-MEAD-DC) 06 A complexity of meadow habitat types and successional patterns support native plant and animal communities. Meadow species composition is predominantly native, where graminoid (grass-like) species are well represented and vigorous, and regeneration occurs naturally. Healthy stands of willow, alder, and aspen are present within and adjacent to meadows with suitable physical conditions for these species. Natural disturbances and management activities are sufficient to maintain desired vegetation structure, species diversity, and nutrient cycling.</p> <p>Desired Condition (RCA-MEAD-DC) 07 Meadows in montane and upper montane areas have low- to moderate-severity fire restored as an ecological process, especially on meadow edges, limiting conifer encroachment, and enhancing native understory plant composition and cover.</p> <p>Desired Condition (RCA-MEAD-DC) 08 Fen condition is within the natural range of variation. Fens are resilient with continual peat accumulation and carbon sequestration. The hydrologic regime, and vegetation, soil, and water characteristics sustain the fen's ability to support unique physical and biological attributes.</p> <p>Objective (RCA-MEAD-OBJ) 01 Enhance or improve conditions on at least five meadows of any size, within 15 years following plan approval.</p> <p>Desired Condition (RANG-FW-DC) 03 Manage rangelands to maintain or restore hydrologic function and soil productivity of watersheds. Livestock grazing is managed to accommodate the maintenance or restoration of aquatic and riparian processes and functions.</p> <p>Standard (RANG-FW-STD) 03 Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are at a minimum proper functioning condition or functioning at-risk with an upward trend, as defined in the appropriate technical reports.</p> <p>Guideline (RANG-FW-GDL) 09 Move or remove livestock in riparian conservation areas that are not properly functioning or functioning at-risk with a downward trend. Limit annual disturbance to streambanks and shorelines of natural lakes and ponds, when livestock trampling and trailing exceeds 20 percent of stream reach, or natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots.</p>
Dry/Non-riparian Meadow Dependent: Sierra marten, great gray owl, California spotted owl, and Mount Pinos sooty grouse.	Native plant composition. Dry meadows, clearings or openings where host plant species may occur.	Invasive plants, conifer/ woodland encroachment, unmanaged grazing.	<p>Desired Condition (RANG-FW-DC) 02 Livestock grazing is managed to meet or move towards the desired vegetation condition represented by diverse plant functional groups, species richness and diversity, and structure and condition of plant communities.</p> <p>Desired Condition (RANG-FW-DC) 05 Annual grasslands that are grazed have livestock management strategies that encourage retention and recruitment of native plants, encourage retention of desirable exotic plants, and discourage or suppress undesirable and invasive exotic plants. These livestock management strategies are adaptable to rapidly changing conditions in forage quality or production.</p> <p>Standard (RANG-FW-STD) 04 If meadow ecological status is determined to be moving in a downward trend due to grazing, modify or suspend grazing. Management of meadows that are in low ecological status or not in proper functioning condition and have active erosion will be modified to achieve or show substantial progress toward meeting mid- or late seral status and proper functioning condition within 5 years.</p>
Open Water Dependent: Golden trout, central valley hitch, Kern River rainbow trout, Kern Brook lamprey, bald eagle, and Western pearlshell	Large bodies of water (lakes or reservoirs) or free flowing large rivers with adjacent large live trees or snags.	Loss or degradation of habitat from lowered water table, changes in water quality, and barriers to movement.	<p>Desired Condition (RCA-LPP-DC) 01 Lakes and ponds retain necessary attributes, such as adequate vegetation and large woody debris to function properly and support native biotic communities. Attributes include floodwater retention and groundwater recharge, stabilized islands and shoreline features, and diverse characteristics to provide for amphibian production, waterfowl breeding, and biodiversity.</p> <p>Goal (SPEC-GT-GOAL) 01 Continue to coordinate and collaborate with California Department of Fish and Wildlife to implement and renew the California Golden Trout Conservation Assessment and Strategy.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
Disturb Intolerant: Townsend's big-eared bat, fringed myotis, nesting raptors, Mount Pinos sooty grouse, denning Sierra marten, limestone salamander, relictual slender salamander, Indian Yosemite snail, and Merced Canyon shoulderband.	Breeding, roosting, hibernacula, and denning habitat. Movement and forage habitat.	Human-caused disturbance, displacement, and direct mortality.	<p>Desired Condition SQF (REC-FW-DC) 09 Camping outside of developed facilities does not adversely impact natural or cultural resources, lower the natural character of the landscape, is economically sustainable and can be effectively and sustainably managed for public health and safety.</p> <p>Desired Condition SNF (REC-FW-DC) 09 Dispersed recreation occurs in areas outside of high visitation, developed facilities, or communities, and does not adversely impact natural or cultural resources.</p> <p>Desired Condition (REC-FW-DC) 10 Permitted recreation uses, such as recreation special events or guided activities, are consistent with recreation settings, protect natural and cultural resources, and contribute to the economic sustainability of local communities.</p> <p>Guideline (REC-FW-GDL) 01 When locating new recreation facilities, do not adversely affect environmentally and culturally sensitive areas, such as at-risk species breeding habitat or at-risk plant species habitat.</p> <p>Guideline (REC-FW-GDL) 03 Use integrated resource planning when designing projects to address impacts to culturally sensitive areas and at-risk species habitat, and to address changing conditions in recreation settings.</p> <p>Goal (REC-FW-GOAL) 02 Manage dispersed recreation activities when evidence of impacts to natural resources emerge or are causing damage.</p> <p>Desired Condition (MA-SFW-DC) 03 Recreation activities are managed to minimize effects to at-risk wildlife. (South Fork Wildlife Area: Sequoia)</p> <p>Desired Condition (MA-DRA-DC) 07 Interpretation and education activities inform visitors about the natural and cultural environment and responsible visitor behavior.</p> <p>Desired Condition (MA-CBRA-DC) 02 These areas contribute to ecosystem and species diversity and sustainability, serve as habitat for fauna and flora, and offer wildlife corridors. These areas provide a diversity of terrestrial and aquatic habitats, and support species dependent on large, undisturbed areas of land.</p> <p>Standard (MA-CBRA-STD) 03 Any new recreation development must be the minimum necessary to accommodate the activity and protect natural resources.</p>
Special habitats and limited distributions: Salamanders, butterflies, and snails.	Special habitats and critical microsite conditions	Population collapse from localized large-scale events. Loss of microsite conditions or host plants. Inability to disperse due to habitat fragmentation.	<p>Desired Condition (TERR-SH-DC) 01 The integrity of special habitats is maintained or improved from current conditions. Composition, diversity, and structure of unique plant assemblages are maintained in all areas, including those with multiple-use activities.</p> <p>Desired Condition (TERR-SH-DC) 02 Microclimate or smaller scale habitat elements provide habitat and refugia for species with a specific geographic or restricted distribution.</p> <p>Desired Condition (TERR-SH-DC) 03 Conditions remain suitable for long-term sustainability of the suite of native plants adapted to special habitats and their associated symbiotic associations, such as insect pollinators.</p> <p>Standard (TERR-SH-STD) 01 At the project scale, evaluate and incorporate maintenance and enhancement needs for special habitats into project design and implementation.</p> <p>Guideline (FIRE-FW-GDL) 05 During wildfires, avoid fire management activities in special habitats (see Terrestrial section, chapter 2) except when necessary to protect life and property. This includes activities such as line construction, staging areas, safety zones, water drafting, and camps. When fire management activities near special habitats are necessary, take extra measures to avoid spread of invasive plants.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Species or Species Group	Key Ecological Conditions at Risk	Key Threats	Key Plan Components
<p>Susceptible to Invasive Species: All</p>	<p>All habitats susceptible to invasive species</p>	<p>Invasive species competition</p>	<p>Desired Condition (INV-FW-DC) 01 Terrestrial and aquatic invasive species are controlled or eradicated when possible, and establishment of new populations is prevented.</p> <p>Desired Condition (INV-FW-DC) 02 The area affected by invasive species and introduction of new invasive species is minimized.</p> <p>Objective SNF (INV-FW-OBJ) 01 Within 15 years of plan approval, take action to control nonnative invasive plant species on at least 300 acres.</p> <p>Objective SQF (INV-FW-OBJ) 01 Within 15 years of plan approval, take action to control nonnative invasive plant species on at least 800 acres.</p> <p>Standard (INV-FW-STD) 01 When working in waterbodies with known aquatic invasive species, clean equipment and vehicles before moving to other waterbodies.</p> <p>Standard (INV-FW-STD) 02 Hay, straw, and other crop-related forage or mulch products used for animal feed or bedding, soil stabilization land rehabilitation, or other purposes must be certified by California or Nevada and/or to the North American Invasive Species Management Association standards as being weed-free to prevent unintentional introduction of invasive species (unless in consultation with the Forest Service invasive species coordinator it is determined that certified weed-free material is not reasonably available).</p> <p>Standard (INV-FW-STD) 03 Use an integrated pest management approach in the planning and implementation of all projects and activities.</p> <p>Standard (INV-FW-STD) 04 When entering or exiting project sites, wash heavy equipment to prevent the spread of invasive species.</p> <p>Guideline (INV-FW-GDL) 01 Projects should be designed to minimize invasive species spread by incorporating prevention and control measures into ongoing management or maintenance activities that involve ground disturbance, terrestrial or aquatic habitat alteration, or the possibility of spreading invasive species. When feasible, projects should include measures to use invasive species-free gravel, fill, and topsoil; and include follow-up inspections as needed and specified in regional or national strategies.</p> <p>Guideline (INV-FW-GDL) 02 To the extent feasible, plant and seed materials used for revegetation, restoration, and rehabilitation projects should be native, genetically appropriate to the site, disease free, and capable of becoming established to restore natural species composition and ecosystem function.</p> <p>Guideline (INV-FW-GDL) 03 Weed control and prevention measures should be included as necessary when issuing, amending or reissuing permits, including but not limited to livestock grazing, special uses, and pack stock operator permits.</p> <p>Guideline (INV-FW-GDL) 04 Vegetation management projects on lands outside of wilderness should include measures to minimize the risk of introducing nonnative invasive species into wilderness.</p> <p>Goal (INV-FW-GOAL) 01 Coordinate and cooperate with local, State and Federal agencies and Tribes to manage and control invasive and nonnative species.</p> <p>Goal (INV-FW-GOAL) 02 Work with Tribes to determine priority areas for weed prevention and control, especially focused on traditional gathering areas that are threatened by weed infestations. Consult with Tribes before using pesticides or herbicides that may affect traditional gathering.</p> <p>Goal (INV-FW-GOAL) 03 Coordinate with research and other organizations to evaluate the potential effects of climate change on the spread of invasive and nonnative species.</p> <p>Guideline (FIRE-FW-GDL) 06 When conducting fire management activities, take appropriate measures to prevent the spread of invasive species.</p> <p>Desired Condition (WTR-RCA-DC) 10 New introductions of invasive species are prevented. Where invasive species are adversely affecting the persistence of native species, the appropriate State and Federal wildlife agencies work to reduce impacts of invasive species to native populations.</p> <p>Goal (WTR-RCA-GOAL) 02 Where aquatic invasive species are adversely affecting the persistence of aquatic native species, work with the appropriate State and Federal wildlife agencies work to reduce impacts of aquatic invasive species to native populations.</p>

Individual Determinations - Animal Species of Conservation Concern

Background

Individual evaluations summarize the key ecological conditions and risk factors for each species, current distribution in the plan areas, and the plan components that mitigate those risk factors, provide for persistence, and contribute to maintaining a viable population within the plan areas. Species-specific plan components were added to supplement ecosystem-level components (Table D-4) to provide additional clarity and emphasis. In a few cases, species-specific plan components are essential to species persistence and long-term viability in the plan areas.

Information on species distribution, ecological conditions, and threats is largely excerpted from the documents “Rationales for Animal Species Considered for Species of Conservation Concern, Sequoia National Forest (United States Department of Agriculture 2019a); and “Rationales for Animal Species Considered for Species of Conservation Concern, Sierra National Forest (United States Department of Agriculture 2019b); additional information on each species of conservation concern, the associated selection process, and full references for best available science can be found in those documents and will not be repeated here.

Mammals

Fringed Myotis – Sequoia/Sierra

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the fringed myotis in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: A variety of roosting structures, most often associated with rock crevices, conifer snags, abandoned mines, caves and buildings (O'Farrell and Studier 1980, Cryan 1997, Baker 1962). In forests, they are reliant on snag habitat for roosts.

Table D-5. Key Threats, Plan Components and Expected Effects on Fringed Myotis

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of natural roost sites	<p>(Reference Crosswalk Table D-5 for Large Tree and Snag Dependent)</p> <p>Guideline (TERR-FW-GDL) 02</p> <p>Mechanical vegetation treatments within forested habitats should include a widely distributed but often clumped distribution of snags and downed logs. Along forest edges and within groups and clumps of large trees, snags and downed logs should be retained to provide habitat and roost sites for wildlife species such as small mammals, cavity-nesting birds, and tree-dwelling bats. <i>Exceptions: Does not apply to community buffers</i></p>	Ecosystem-level plan components provide for key structural features such as snags needed for roosting. Fire is maintained as a natural process on the landscape and promotes ecosystem resilience.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of hibernacula habitat: mines and caves	N/A	Previous and ongoing mine reclamation practices would safeguard potential roost habitat is not lost by utilizing bat-friendly gates and entrances are not sealed.
Recreational caving and other human disturbance	(Reference Crosswalk Table D-5 for <i>Disturb Intolerant</i>)	Ecosystem-level plan components would protect sensitive habitats, including caves and mines, and manage recreation opportunities to limit disturbance to sensitive species such as fringed myotis. To ensure bat hibernacula and maternity roosts are protected, the Responsible officials intend to install bat gates or issue closures to restrict access and therefore, reducing potential for human disturbance.
Loss of anthropogenic roost sites	N/A	Removal or exclusion from anthropogenic roost sites occurs in urban areas and results from modification of buildings, human disturbance, or extermination or exclusion for human health and safety. No known anthropogenic roosts occur within the plan areas therefore it is outside the authority of forest management activities.
White-nose syndrome	Goal (SPEC-FW-GOAL) 05 Coordinate with State and Federal agencies and other partners to provide education materials and best management practices information for the public and permittees to limit the potential spread of disease to caves and mines used by bats.	White-nose syndrome is a potential future threat that may or may not affect fringed myotis if the disease were to spread to California. More study is needed. Regardless of the level of impact the best method to ensure white-nose syndrome does not become a threat is prevention of contamination and spread into potential habitats. Several general plan components including SPEC-FW-GOAL 05 focus on education of environmental issues and best management practices for the public to prevent the spread of disease.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk Table D-5 for <i>Susceptible to Stochastic Events</i>)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Loss of natural roost sites such as snags, loss of hibernacula habitat such as caves and mines, loss of anthropogenic roosts, climate change, white-nose syndrome, and recreational caving or other human disturbance to roosts sites pose threats to fringed myotis persistence.

Threats under Forest Service Control

- Loss of natural roost sites through the removal of conifer and hardwood snags

- Loss of hibernacula habitat through improper closure of abandoned mines or caves
- Recreational caving and other human disturbance

Fringed myotis appears to be highly dependent on tree roosts within forest and woodland habitats. In some forested settings, this species appears to rely heavily on tree cavities and crevices as roost sites (Weller 2005), and may be threatened by certain timber harvest practices.

Forest habitat is at-risk from stand replacing fire and bark beetle outbreaks. Because of fringed myotis' limited occurrence on the forest, and because an entire maternal colony could be concentrated in one snag or large tree, removal or loss of even one snag could have an adverse effect on the local breeding population. Removal or loss of large snags and trees with cavities greater than or equal to 58 cm diameter at breast height (dbh) (23 inches) during timber harvest or fire may result in a reduction of roost site availability on National Forest System lands (Pierson et al. 2016). Like most forest dwelling bat species, fringed-myotis are documented to mainly use snags as roosting structures in forested habitat (Weller and Zabel 2001). Retention and recruitment of snags in number, size, configuration, and decay throughout the plan areas is considered a limiting factor based on the short-lived nature of these structures and the potential for loss during harvest operations and fires. However, the Sequoia National Forest has been experiencing extreme drought and insect related tree deaths. This is expected to continue and can increase the number and availability of snags important for bat roosting.

Caves and mines are numerous across the Sequoia and Sierra Forests. Management activities would not substantially affect cliff, cave, or cave-like structures. These potential bat habitats are stable and increasing due to retiring of mines. Disturbance from active mining operations and recreation may pose a risk factor at maternity or roosting sites. but these were not identified as specific threats to fringed myotis on the Sierra or Sequoia National Forest. Potential management approaches include restricting access to caves and mines utilizing bat-friendly gates or other means to alleviate disturbance at hibernacula sites and preventing the contamination of caves and mines from diseases.

Threats Not Under Forest Service Control

- Loss of anthropogenic roost sites
- White-nose syndrome
- Habitat loss or degradation due to climate change, widespread tree mortality, or other stochastic events.

Removal or exclusion from anthropogenic roost sites such as buildings is most prevalent in urban areas and results from restoration of historic structures, human disturbance, or extermination/exclusion for human health and safety reasons. Loss of roost sites in urban environments is not considered a limiting factor within the plan areas.

One of the greatest threats to North American myotis species is white-nose syndrome. White-nose syndrome is caused by a fungus that persists in cold cave environments and afflicts hibernating bats. White-nose syndrome is a potential future threat that has not yet been detected in California, but has recently been documented in Washington State (Sleeman 2016). Fringed myotis are not known to be affected by white-nose syndrome; however, white-nose syndrome has devastated other related myotis populations in eastern United States. Fringed myotis use of mines and caves for

hibernacula makes them susceptible to the disease if it were to become established in the plan area and may cause devastating impacts to this already declining species.

According to the National Report on Sustainable Forests (United States Department of Agriculture 2004a), there is a high possibility of increased high intensity fire. High intensity fire and insect and disease outbreaks could decrease old forest and habitat connectivity, but increase the number of snags and potential bat roosting habitat. However, longer term effects may be less beneficial resulting in a net loss in roosting habitat due to snags falling over time, lack of replacement of trees into larger size classes, and high severity fires completely removing entire tree stands.

Sequoia – Fringed Myotis

Information on Current Distribution of the Species in the Sequoia Planning Unit

Population size is unknown; however, they are thought to be widely distributed but rare everywhere they are found. The limited data available suggests serious population declines. Many historically occupied sites are no longer used for a variety of reasons including human disturbance, modification of surrounding habitat, and exclusion from sites for health and safety reasons (Pierson et al. 2016).

In California, the species is found throughout the state, from the coast to greater than 5,900 feet in elevation in the Sierra Nevada Mountains. Museum records document only six maternity sites: two in Kern County, and one each in Marin, Napa, Tuolumne, and Tulare counties. Investigation of four of these sites since 1990 has shown that while the roosts are still available this species is no longer present at any of these sites (Pierson et al. 2016).

The CNNDDB has recorded occurrences of the fringed myotis on the southern part of Sequoia National Forest and at Case Mountain near Sequoia National Park (California Department of Fish and Wildlife 2017b). The entire Sequoia National Forest is within the mapped California Wildlife Habitat Relationship (CWHR) range for this species (Cordes 2018). According to the CNNDDB, fringed myotis have been recorded at Miracle and Democrat Hot Springs in Kern County. One male was collected in 1998 and a post-lactating adult was captured and released in 1992 (at a mine), both on the Kern River Ranger District. One male was collected in 1999 south of Delonegha Hot springs, along highway 178 and the Kern River (Kern River Ranger District). There are no occurrence records of fringed myotis in the NRIS database, however, there have been very few bat surveys conducted on the forest in recent years.

Key Ecological Conditions in Sequoia Plan Area

Large trees and snags and abandoned mines and caves provide critical roosting habitat and hibernacula. Snags documented to be used by fringed myotis for roosting in California are the tallest or second tallest pine or fir snag, have loose or sloughing bark, are greater than 58 cm dbh (23 inches), and are often in groups of 5 (Weller and Zabel 2001). They have also been documented to use giant sequoia basal hollows as maternity roosts in Yosemite's Merced Grove (Pierson et al. 2016). Fringed myotis forage along streams and meadows.

There are 36 active mining claims on the Sequoia National Forest; 35 are located on the Kern River Ranger District and 1 active mining claim on the Western Divide Ranger District (United States Department of the Interior 2013a).

The Sequoia National Forest and Giant Sequoia National Monument has 255 known abandoned mines which were surveyed from 1993-1998 (Bureau of Land Management Mining Claim Geographic Index Report 2009 as summarized in a spreadsheet by Donna Duncan Kern River Ranger District Sequoia National Forest/Giant Sequoia National Monument).

Large snags and trees can be found throughout the Sequoia National Forest in mixtures of ponderosa pine or Jeffrey pine, sugar pine, incense cedar, and white fir dominate, with some red fir at higher elevations.

Sequoia Summary

Range-wide population trends are unknown for fringed myotis, but likely declining with many historically occupied sites no longer used. On the Sequoia National Forest there are no known maternity sites though suitable habitat does occur. Due to the colonial maternity roosting behavior the loss of even one maternity site could significantly impact local populations. Widespread forest mortality and the loss of snags due to wildfire, disease, climate change, and insect outbreaks may put fringed myotis at-risk to persistence in the planning area. In addition, the future threat of white-nose syndrome could have a devastating effect on this myotis species if the fungus were to spread to California. The Forest Service's ability to directly control these threats and the lack of knowledge of existing viable populations in the Sequoia planning area makes it not within the inherent capability of the Forest Service to maintain a viable population of the fringed myotis. However, forest plan components for terrestrial ecosystems and vegetation, conservation of watersheds, sustainable recreation, and species direction should maintain or restore ecological conditions in the plan area to contribute to maintaining a viable population of the species within its range. In addition, potential management approaches to "protect known bat hibernacula or maternity colonies that may be adversely affected by recreational, management, or other activities by either installing bat gates at the entrances of caves and mines or restricting access by other means," would advise the Responsible Officials to achieve proper mine and cave management and alleviate human disturbance.

Sierra – Fringed Myotis

Information on Current Distribution of the Species in the Sierra Planning Unit

Like Sequoia National Forest, population size is unknown and fringed myotis are thought to be widely distributed but rare everywhere they are found (Pierson et al. 2016).

According to the NRIS database there are 30 observations of fringed myotis on the Sierra National Forest, all recorded in the last ten years. Surveys across the Sierra National Forest have detected fringed myotis at several sites including Huntington Lake, Markwood Meadow, Buck Meadow and the Sweetwater Mine. NRIS records show that six fringed myotis bats have been captured in mist-netting surveys on the forest.

Key Ecological Conditions in Plan Area

Large trees and snags that are greater than 58 cm dbh (23 inches) and abandoned mines and caves provide critical roosting habitat and hibernacula.

The forest assessment for the Sierra National Forest, notes that the number of large trees and snags are low and highly variable across all forest types. In all conifer types, there is less than 5 large (less than 30 inch diameter) trees per acre. In addition, large trees are not evenly distributed; large tree densities are typically less than one to two trees per acre. Most areas have a few large

trees per acre and some patches, often previously disturbed (timber harvest or wildfire), have none. Large snags show similar patterns to large trees, but with lower densities and higher variation. Calculations of snags greater than 15 inches diameter show the range is from 1 to 4 snags per acre in conifer forests.

Gold mining on the northern part of the Sierra National Forest has a long history that continues today with many small operators who are strongly influenced by current high gold prices. There are 491 inventoried Abandoned Mine Lands on the Sierra National Forest. Approximately, 71 abandoned mine land sites are located within designated wilderness. There are approximately 49 underground mines, 61 surface operations, 30 placer mining operations, 28 surface-underground operations, and 3 wells located within the Sierra National Forest. Three hundred twenty of the inventoried sites have unknown operation types. Mine sites have been assessed since 1985 and restoration operations are ongoing. Several of these mines have adits or shafts that have been closed with bat gates and require periodic review of the condition of the gates to ensure they are still functional or need maintenance. As of 2017, bat gates have been placed in five abandoned mine sites.

The 338-acre Kings Cavern Geological Area includes three major cave systems with at least 16 entrances and up to 2,000 feet of passageways. This is the most extensive and well-preserved cavern on the Sierra National Forest. Access is limited and distanced from population centers reducing human-caused disturbance and promotes preservation of the cave features.

The Kaiser Wilderness has several small caves that vary from 33 feet to 860 feet in length. Field reconnaissance has discovered at least three different cave systems in the Kaiser Wilderness. These caves are all located in sinkholes at the bottom of drainages. Four of these caves are eligible for nomination as significant caves because of unique characteristics in geologic, hydrological and recreational features. Biological and cultural features have not been thoroughly conducted. The location of these caves is considered sensitive information under the Federal Cave Resources Protection Act of 1988. These caves are likely subject to frequent exploration and potential damage. Biological surveys are ongoing and evidence of bat use has been observed at a number of the caves.

Sierra Summary

Similar to Sequoia National Forest, on the Sierra National Forest there are no known maternity sites though suitable habitat does occur and primary threats fall outside the Forest Service's control. The ability to directly control primary threats and the lack of knowledge of existing viable populations within the Sierra planning area makes it not within the inherent capability of the Forest Service to maintain a viable population of the fringed myotis. However, forest management activities in the form of goals and standards for terrestrial ecosystems and vegetation, conservation of watersheds, sustainable recreation, and animals and plant species should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range. In addition, potential management approaches to "protect known bat hibernacula or maternity colonies that may be adversely affected by recreational, management, or other activities by either installing bat gates at the entrances of caves and mines or restricting access by other means," would advise the Responsible Officials to achieve proper mine and cave management and alleviate human disturbance.

Sierra Marten – Sequoia/Sierra

Sequoia Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Sierra marten in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Sierra Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the Sierra marten in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: Mature coniferous forest, typically more moist than dry, with supporting features such as large-diameter trees and snags, multi-layered canopies, large down wood, moderate to high canopy closure (more than 30 percent) and structurally diverse and complex understory that is interspersed with riparian areas and meadows. Core patch size and spatial connectivity of patches is also important.

Table D-6. Key Threats, Plan Components and Expected Effects on Sierra Marten

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat or connectivity due to management activities such as fuels reduction, vegetation treatments, timber harvest and recreation use.	<p>(Reference Crosswalk for Susceptible to Stochastic Events, Forest Dependent, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Complex Early Seral Habitat Dependent)</p> <p>Desired Condition (SPEC-SM-DC) 01 Risk of large high-severity fire is reduced from current conditions in marten habitat core areas.</p> <p>Desired Condition (SPEC-SM-DC) 02 Within marten core habitat, vegetation is trending toward desired conditions for terrestrial and riparian vegetation.</p> <p>Desired Condition (SPEC-SM-DC) 03 Marten habitat is well distributed throughout the marten's range, providing for foraging, denning, and resting habitat and movement across large landscapes.</p> <p>Guideline (SPEC-SM-GDL) 01 Within marten core habitat, retain overtopping and multi-storied canopy conditions in patches consistent with vegetation desired conditions, including some shade-tolerant understory trees such as firs, especially in drainages, swales and canyon bottoms and on north- and east-facing slopes. Retain a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale.</p> <p>Exceptions: Does not apply to community buffers.</p>	<p>Ecosystem-level plan components for Terrestrial Ecosystems, Timber Management and Species Direction provide direction for maintaining habitat in areas where management activities take place. They do this by emphasizing heterogeneity, connectivity, and retention of key structural elements including old growth components, snags and trees. A standard for forestwide terrestrial habitat ensures the retention of conifer trees greater than 30 inches in diameter while guidelines ensure fuel reduction treatments minimize mortality of large, old trees and snags and incorporate design features that reduce fire intensity and promote delayed mortality. Objectives provide specific and measurable strategies to move forest composition and structure toward desired conditions, and return natural fire regimes to the landscape further reducing loss of habitat and promoting ecosystem resilience. These restoration-based objectives would help keep up with the pace and scale needed to maintain ecological integrity and resist key stressors over time.</p> <p>Desired conditions and guidelines for Wilderness and Riparian Conservation Areas mitigate threats from recreation, fire and livestock and ensure watersheds are functioning properly and that impacts to martens are minimized. Forestwide guidelines for Sustainable Recreation</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Same as above.	Same as above.	<p>minimize the addition of recreational facilities in at-risk species habitat and ensure at-risk species needs would be integrated into project design in recreation settings.</p> <p>Forestwide standards and guidelines for species direction promote design features and mitigations that consider needs of all at-risk species, including martens, during project implementation.</p> <p>Species specific guidelines for marten reinforce ecosystem-level plan components and specifically ensure core habitat would be retained during site specific projects; that cover is adequate for marten prey species, and that heterogeneous understory habitat provides denning sites and supports prey.</p>
Human disturbance from recreational activities including vehicle strikes.	(Reference Crosswalk for Disturb Intolerant)	Public use of forest roads has grown steadily, and driving for pleasure is the single largest recreation use of Forest Service managed lands. Attempts to reduce this risk have included placing signs and reducing speed limits, as well as identifying high priority travel corridors and developing culvert passageways under roads.
Loss of quality mature forest or meadow riparian habitats due to climate change, widespread tree mortality, or other stochastic events (e.g. wildfire, reductions in snowpack).	(Reference Crosswalk for Susceptible to Stochastic Events, Forest Dependent, Riparian/Water Dependent, Wet/Riparian Meadow Dependent)	<p>Ecosystem-level plan components that include desired conditions for Watersheds, Terrestrial Ecosystems, Old growth, Montane, Subalpine and Alpine, and Riparian areas help to ensure martens have adequate habitat for movement, dispersal, feeding, and reproduction at multiple scales that may otherwise be lost due to climate change and other stochastic events such as high severity fire and insect outbreaks.</p> <p>Species specific plan components for marten provide desired conditions that marten core habitat areas are intact and well distributed. Desired conditions for riparian conservation areas support persistence of species of conservation, such as marten.</p>
Inadvertent poisoning	Goal (SPEC-FW-GOAL) 06 Coordinate with local, state, and federal law enforcement and other agencies to remove and remediate poisonous substances and pesticides associated with marijuana cultivation in the wildland.	Remediation and enforcement on illegal marijuana plots to remove poisonous substances would benefit martens by increasing prey and reducing inadvertent poisoning of martens and their prey.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Predation	N/A	Bobcats and mountain lions have been identified as the main predators of martens. The forest plans do not include population control for these predator species so predation on martens would continue. A potential management approach to avoid or remediate habitat modifications that unnaturally increase marten susceptibility to predation is included in the forest plans.

Key Threats to Persistence

Loss and fragmentation of mature forest habitat from multiple sources including timber harvest, vegetation management, extensive tree mortality, climate change, and wildfire. Recreational activities and roads (with vehicle strikes), poisoning from toxins from marijuana plantations and predation also are threats to martens.

Threats Under Forest Service Control

- Loss of habitat or connectivity due to management activities such as fuels reduction treatments and timber harvest
- Human disturbance and vehicle strikes from recreation activities
- Predation

Marten appear to be very sensitive to removal of key resting and breeding habitat features from their home ranges. (Moriarty, Zielinski, and Forsman 2011) provide compelling evidence for a decline in the marten population on the Sagehen Experimental Forest affected by the loss and fragmentation of habitat associated with decades-long timber harvest that consisted of clear-cut, shelterwood and salvage sales. This study documented a substantial decline in the number of martens detected. Key factors contributing to decline in marten numbers on the Sagehen site included decreases in habitat patch size, acres of core habitat area, total marten habitat and an increase in the distance between habitat patches (Moriarty, Zielinski, and Forsman 2011). Loss and fragmentation of suitable habitat of large live and dead or dying trees reduce availability of resting and denning sites (Moriarty, Zielinski, and Forsman 2011).

Since vegetation management has declined substantially since the early 1990s, public use of forest roads has grown steadily, and driving for pleasure is the single largest recreation use of Forest Service managed lands. Vehicle related mortality has been observed on the Sierra National Forest. Although there are no marten specific plan components to address vehicle strikes, Goal (SPEC-FSHR-GOAL) 01 designed to reduce the rate of fishers hit by vehicles would also benefit martens where their habitats overlap.

Winter recreation use on the forest is relatively low, however, potential for disturbance to marten individuals may occur from available recreation activities which include downhill and cross-country skiing, snow play, riding snowmobiles and snow shoeing. Motorized travel in designated and recommended wilderness areas is typically not allowed and would reduce disturbance impacts to marten.

Most of the threats for Sierra marten can be addressed through ecosystem-level plan components that emphasize resilient, connected forests containing the complex structural features martens need for survival and reproduction. However, species-specific plan components have been added in a few instances for greater clarity and emphasis. Loss of old growth habitat and key structural attributes for denning and nesting are key threats and desired conditions for Sierra Marten (SPEC-SM-DC 01-03) minimize the risk from high-severity fire in marten habitat core areas, ensure overarching desired conditions from terrestrial and riparian vegetation are met and that marten habitat is well distributed throughout the landscape providing for foraging, denning and resting habitat and movement across large landscapes. Guideline (SPEC-SM-GDL) 01 retains overtopping and multi-storied canopy and a patchy mosaic of shrubs and understory vegetation, separated by more open areas, to reduce fuel continuity, increase habitat heterogeneity, support prey, and provide hiding cover, with a goal of 10 to 20 percent shrub cover at the home range scale.

A monitoring project within the Sierra National Forest (the Kings River Project) has confirmed 27 mortalities (14 males and 13 females) since the inception of the project (Thompson, Duncan, and Johnson 2009). Twenty-two of the mortalities (81 percent) can be attributed to predation, with bobcats and mountain lion as the main predators (Thompson, Zielinski, and Purcell 2011). The Forest Service cannot directly control predation on martens, but a potential management approach aims to promote hiding cover and heterogeneity in denning habitat and avoid or remediate habitat modifications that unnaturally increase predation on martens.

Threats Not Under Forest Service Control

- Loss of quality mature forest, meadow riparian habitats, or habitat connectivity due to climate change, widespread tree mortality, or other stochastic events (e.g. wildfire, reductions in snowpack)
- Inadvertent poisoning from illegal marijuana cultivation

Overall, connectivity of old-forest associated species like marten is high, but remains vulnerable to high intensity fire. Weather conditions favorable to intense fire are already increasing with climate change and are expected to increase more in the future. The forest's north-south oriented canyons and mountains across most of the forest allow for northward movement. This would become increasingly important with climate change. Past fire suppression policies have led to conditions that can result in large areas of high severity fire that may be detrimental to species, such as marten, that depend on old forest. Stand replacing fires can cause even-aged, early seral habitats blocks that do not provide the forest diversity to support Sierra marten or their prey species. Although, the Forest Service cannot entirely remove the threat of climate change and causes of widespread tree mortality the revised plan components aim to restore old forests to the natural range of variation and return healthy fire mosaics to the landscape. This would work towards providing healthy, diverse, resilient habitat for Sierra martens.

Illegal rodenticide poisons used on marijuana plantations is a growing area of concern throughout the Sierra Nevada and poses a threat to numerous mammals, including martens (Gabriel, Woods, Poppenga, Sweitzer, Thompson, Matthews, Higley, Keller, Keller, et al. 2012). The impact presents a harmful effect to population health, survival and status. Goal (SPEC-FW-GOAL) 06 would work with partners to reduce this threat.

Sequoia – Sierra Marten

Information on Current Distribution of the Species in Sequoia Planning Unit

In the CNNDDB there are 4 records for Sierra marten in Tulare and Kern County recorded over 20 years ago on the Kern River Ranger District. There are 397 records for marten in the NRIS database. Most observations are of solitary individuals with one record of a family unit recorded in 1992. The most recent occurrence record in the NRIS database for Sierra marten was in 2010; no recent den sites are known. However, monitoring on the Sequoia National Forest is currently limited. Dens may exist because the species has persisted on the forest over time, but without more intensive telemetry work this has not been confirmed.

Key Ecological Conditions in Sequoia Planning Area

Martens need structurally diverse mature conifer forests; abundant snags and down logs; heterogeneous habitat for cover and prey species, high canopy cover (40 to 60 percent). Marten resting/denning structures are the most critical habitat elements. These ecological conditions occur at high elevation (4,500 to 10,500 feet) in late-successional, mature red fir and lodgepole pine forests in areas with abundant snowpack (greater than 9.2 inches in depth).

Sequoia Summary

There is no information on current marten population size or density estimates for the Sierra Nevada and there have been no documented denning sites with young on the Sequoia National Forest. Marten habitat has been fragmented, distribution reduced, and suitable habitat has also been reduced and isolated in parts of the range. The mixed conifer forests on the Sequoia National Forest are at high risk of loss from stand replacing wildfire and bark beetle related mortality. This primary risk, coupled with range wide declining and small population numbers of the marten, and reduced snowpack resulting from climate change, puts this species at future risk. These changes may be of particular concern given the Sequoia National Forests location at the edge of the species southern-most range. The Sequoia National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks, but cannot mitigate all threats for persistence. Due to the lack of information whether a current viable population of Sierra marten exists on the Sequoia National Forest and the primary threats being outside the control of Forest Service authority is it not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Sierra marten. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Sierra – Sierra Marten

Information on Current Distribution of Species in Sierra Planning Unit

The Sierra National Forest has 402 records of Sierra marten in the NRIS database. Incidental observations are numerous, but den sites have not been located. However, monitoring is limited and dens may likely exist because the species has persisted on the forest over time. Without more intensive telemetry work this has not been confirmed.

Key Ecological Conditions in Sierra Planning Unit

Structurally diverse mature conifer forests; abundant snags and down logs; heterogeneous habitat for cover and prey species, high canopy cover (40-60%). Similar to fisher in that resting/denning structures are the most critical habitat elements.

On the Sierra National Forest, marten habitat can be found in the Upper Montane Zone where snow is the primary precipitation. Red fir forests co-occur with Jeffrey pine in the rockier sites and western white pine can be found on more productive sites. Wetter sites, where the water table remains high in the summer, may contain pure stands of lodgepole pine. Shrub-dominated areas occur where sites have been logged or otherwise disturbed by past forest management activities. Granitic outcrops are abundant in this zone as well, with many forest endemics and other rare plants. In addition, meadows and riparian habitats close to conifer forest provide important prey species and cover.

Sierra Summary

There is no information on current marten population size or density estimates for the Sierra Nevada and there have been no documented denning sites on the Sierra National Forest, but the number of documented and incidental observations suggests a viable population exists within the Sierra National Forest plan area. The loss of contiguous old forest breeding habitat coupled with declining and or small population numbers of marten, and reduced snowpack resulting from climate change, may put the species at future risk. Further loss of larger trees and diversity in pine forests, increased risk to upper montane forest from uncharacteristic stand-replacing fire, and insect outbreaks and warming temperatures with reduction of snowpack creates substantial concern about this species ability to persist on the planning unit.

Based upon this evaluation and the assumption that a viable population of martens exists despite the lack of documentation, the final set of ecosystem plan components and the additional species-specific plan components would provide the necessary ecological conditions to maintain a viable population of Sierra marten within the plan area over the duration of the forest plan.

Townsend's Big-eared Bat – Sequoia/Sierra

Determinations: It is not within the inherent capability of the plan areas to maintain or restore the ecological conditions to maintain a viable population of the Townsend's big-eared bat in the plan areas. Nonetheless, the plan components should maintain or restore ecological conditions within the plan areas to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Multiple ecosystem types for foraging and uses roosting habitat which contains rocks (canyons, caves, mines, and cliffs), and or manmade habitat (buildings, bridges) as well as large trees and snags for roosting.

Table D-7. Key Threats, Plan Components and Expected Effects on Townsend's Big-eared Bat

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Recreational caving and other human disturbance	(Reference Crosswalk for Disturb Intolerant)	Ecosystem-level plan components would protect sensitive habitats, including caves and mines, and manage recreation opportunities to limit disturbance to sensitive species, such as Townsend's big-eared bat. To ensure bat hibernacula and maternity roost are protected, the responsible officials intend to install bat gates or issue closures to restrict access and therefore, reducing potential for human disturbance.
Loss of foraging habitat due to forest management activities	(Reference Crosswalk)	Ecosystem-level plan components that include desired conditions for Watersheds, Terrestrial Ecosystems, Old growth, Montane, Subalpine and Alpine and Riparian areas help to ensure bats have adequate habitat for foraging, and movement that may otherwise be lost due to climate change and other stochastic events such as high severity fire, insect outbreaks, and large-scale forest mortality.
Loss of mine and cave roosting habitat due to improper management	N/A	Previous and ongoing mine reclamation practices would ensure potential roost habitat is not lost and entrances are not sealed. The responsible officials intend to install bat gates or issue closures to restrict access and therefore, reducing potential for roost abandonment.
White-nose syndrome	Goal (SPEC-FW-GOAL) 05 Coordinate with State and Federal agencies and other partners to provide education materials and best management practices information for the public and permittees to limit the potential spread of disease to caves and mines used by bats.	White-nose syndrome is a potential future threat that may or may not affect Townsend's big-eared bats if the disease were to spread to California. More study is needed. Regardless of the level of impact the best method to ensure white-nose syndrome does not become a threat is prevention of contamination and spread into potential habitats. Several general plan components including SPEC-FW-GOAL 05 focus on education of environmental issues and best management practices for the public to prevent the spread of disease.
Low fecundity/high first-year mortality	N/A	There are no forest management activities that can alleviate low fecundity or address the reproductive biology of Townsend's big-eared bat. This threat would continue.
Inadvertent poisoning	Goal (SPEC-FW-GOAL) 06 Coordinate with local, state, and federal law enforcement and other agencies to remove and remediate poisonous substances and pesticides associated with marijuana cultivation in the wildland.	Remediation and enforcement on illegal marijuana plots to remove poisonous substances would benefit bat species by increasing prey and reducing inadvertent poisoning.

Key Threats to Persistence

Threats include human disturbance, improper mine or cave closure, white nose syndrome, low fecundity or high first-year mortality, and unauthorized poisonous substance use. The primary limiting factor for this species is adequate maternity roosting habitat especially in caves and mines. Townsend's bats are among the most dependent of all North American bats on undisturbed abandoned or inactive mines.

Threats under Forest Service Control

- Recreational caving and other human disturbance
- Loss of foraging habitat due to forest management activities
- Loss of roosting habitat through improper closure of abandoned mines or caves

Townsend's big-eared bats are highly vulnerable to human disturbance in or adjacent to caves and mines. Particularly hibernacula and nursery sites where a single human visit may result in abandonment of the entire roost (Zeiner et al. 1990, Piaggio and Perkins 2005, Gruver and Keinath 2006). The species is particularly vulnerable during the maternity season, when females are gathered and raising defenseless young (Pierson and Rainey 1998). The preference for Townsend's bats to roost in visible clusters near the entrance of caves and mines instead of deeper in structures and within cracks makes them easy to discover. When encountered and disturbed these bats will flush from roosts sites making them more susceptible to predation and distract them from obtaining their basic needs. Even installed bat-friendly gates may not adequately prevent disturbance since Townsend's bats roost near entrances and recreationists looking in cave and mine entrances could cause bats to abandoned sites. The species-specific potential management approach to "protect known bat hibernacula or maternity colonies that may be adversely affected by recreational, management, or other activities by either installing bat gates at the entrances of caves and mines or restricting access by other means," would advise the Responsible Officials to achieve proper mine and cave management and alleviate human disturbance.

Both forests are currently installing bat-friendly gates as part of mine and cave reclamation and this would continue dependent on available funding and resources.

Threats Not Under Forest Service Control

- White-nose syndrome
- Low fecundity and high first-year mortality
- Inadvertent poisoning from illegal marijuana cultivation

In addition to the existing, known threats, an emerging threat is white-nose syndrome. White-nose syndrome is a highly-contagious infection of hibernating bats and it has been associated with massive mortality of cave-hibernating bat species in the northeastern United States (Blehert et al. 2009). Due to the cave roosting nature of Townsend's big-eared bat, white-nose syndrome is a potential future threat. However, with the exception of one confirmed and one suspected case in Washington State, there are no documented cases of this disease in the west (White-Nose Syndrome Response Team 2018). Townsend's big-eared bats are not known to be affected by white-nose syndrome and several closely related bat species, Ozark big-eared bat and Virginia big-eared bat, in affected areas have not been documented to have the disease. In addition, bat

species which have been hardest hit by white-nose syndrome are characterized by hibernating colonies with large clustering behavior and caves with higher humidity levels (Marroquin, Lavine, and Windstam 2017). Townsend's bats tend to roost alone or in small clusters which may put it less at-risk from the potential threat of white-nose syndrome, should it make its way to California. Restricting access to caves and mines, as discussed above, would reduce potential contamination and spread of white-nose syndrome. Finally, Goal (SPEC-FW-GOAL) 05 aims to alleviate this potential future threat through coordination with state and federal agencies to provide education and best management practices to the public to limit the potential spread of white-nose syndrome.

Townsend's big-eared bats have slow reproductive rates with usually one pup per year. This low fecundity combined with high sensitivity to disturbance (see above) puts the species' persistence at-risk in the region. The Forest Service cannot control the reproductive biology of bats but can reduce the amount of disturbance to potential maternity roost sites through proper management of recreation and mine/cave habitats.

Illegal use of herbicides, pesticides, insecticides, and fertilizers by marijuana growers in national forests can pose a threat to bats through reduction in prey and contamination of prey leading to poisoning. Through the legalization of marijuana in California it is anticipated illegal marijuana plantations would decrease on federal lands; however, some marijuana plots would likely persist and continue to use poisonous substances outside the control of the Forest Service. Although the Forest Service cannot completely control unauthorized use of the toxins on National Forest System lands SPEC-FW-GOAL 06: *Coordinate with local, state, and federal law enforcement and other agencies to remove and remediate poisonous substances and pesticides associated with marijuana cultivation in the wildland* would aim to alleviate this threat and contribute to the persistence of bat species.

Sequoia – Townsend's Big-eared Bat

Information on Current Distribution of the Species in the Sequoia Planning Unit

Historically, the Townsend's big-eared bat was found throughout California as a scarce, but widespread species (Barbour and Davis 1969). Research suggests substantial declines throughout California over the past 40 to 60 years, including an estimated 54 percent decline in individuals, 52 percent decline in maternity colonies, and a 45 percent decline in available roosts (Pierson and Rainey 1998). The most marked declines occurred in the central Sierra Nevada (Pierson and Rainey 1998).

There are 14 records for Townsend's big-eared bat in the CNNDB in Fresno and Kern Counties (Hume and Kern River Ranger Districts) along the Kings River. Records were collected along the southwest shore of Lake Isabella in the vicinity of Miracle Hot Springs and associated mines along highway 178 and the Kern River. Most of these past inventories recorded small colonies with less than 5 individuals present with most recent occurrence data from 1993. At Giant Sequoia National Monument there are records at Windy Cliffs and at Boyden Cave south of Wren Peak that describes a bat roost with a colony size of 25 females in 1987-1991 and noted it as a declining population. This cave is now gated to prevent disturbance. Townsend's big-eared bat was detected as recently as 2010 in Giant Sequoia National Monument (J. Cordes Sequoia National Forest). The Giant Sequoia National Monument is not included in the planning area, but the proximity suggests the species can use the planning area for foraging, movement, and short duration roosting. Complete bat surveys for Sequoia National Forest are limited but this species is

typically easy to detect in its significant maternity habitat and prefers hanging in clusters in the open just inside entrances to mines and caves. There are no known hibernacula or maternity colonies on Sequoia National Forest; however, suitable habitat does exist.

Key Ecological Conditions in Sequoia Plan Area

The Sequoia National Forest and Giant Sequoia National Monument have 255 known abandoned mines which were surveyed from 1993-1998 (Bureau of Land Management Mining Claim Geographic Index Report 2009). There are 15 well known caves and possibly as many as 100 additional caves located on the Sequoia National Forest. The majority of the known caves are within the Giant Sequoia National Monument and fall outside the planning area; three well known caves Greenhorn, Packsaddle, and Deep Creek are located in the planning area, but Townsend's big-eared bats have not been detected there. There were no significant caves identified in the assessment for the Sequoia National Forest. In addition, there are 36 active mining claims on the Sequoia National Forest which may provide for future bat habitat when the mines are retired and undisturbed (BLM claim records 2010).

Starting in 1995 the Sequoia National Forest and Giant Sequoia National Monument has had an active Abandoned Mine Reclamation Program and has taken reclamation actions on approximately four abandoned mines per year. Mine closures, often with the intent to protect human safety, can eliminate access to roosts and hibernacula. Forest service records document approximately 18 bat gates and 2 bat nets with fencing installed from 1996-1999. Proper reclamation of mines would ensure potential Townsend's big-eared bat habitat is not lost and provides potential for creation of more suitable habitat that could aid in the recovery of the species.

Sequoia Summary

The majority of suitable Townsend's big-eared bat cave and mine roosting habitat occurs on the Giant Sequoia National Monument, outside the plan area. The amount of cliff, cave, and cave-like habitat is not expected to change in the planning area and forest management activities would not substantially affect potential bat roosting habitat. Active mining claims have the potential to increase in the future which could create additional adits and shafts for bat use after the mines have been retired. The limited occurrence data, coupled with limited suitable habitat, suggest it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Townsend's big-eared bats. The Sequoia National Forest would have a number of ecosystem-level plan components in place to mitigate risks within its management authority, and intends to ensure bat hibernacula and maternity roosts are protected by installing bat gates or issuing closures to restrict access, but cannot mitigate all threats to persistence.

Sierra – Townsend's Big-eared Bat

Information on Current Distribution of the Species in the Sierra Planning Unit

Historically, the Townsend's big-eared bat was found throughout California as a scarce, but widespread species (Barbour and Davis 1969). Research suggests substantial declines throughout California over the past 40 to 60 years, including an estimated 54 percent decline in individuals, 52 percent decline in maternity colonies, and a 45 percent decline in available roosts (Pierson and Rainey 1998). The most marked declines occurred in the central Sierra Nevada (Pierson and Rainey 1998).

In the NRIS database, the Sierra National Forest has 16 records all within the vicinity of Shaver Lake Recreation area on the High Sierra Ranger District. There are six CNDDDB records, including from Shaver Lake, Markwood Creek, and Glen Meadow Creek areas. Townsend's big-eared bats have either been caught or acoustically detected during surveys that were conducted approximately five miles west of the Exchequer Restoration project area (United States Department of Agriculture 2017). It is currently unknown what the population trend or occupancy rate is for this species on the forest.

Key Ecological Conditions in Sierra Plan Area

As described under fringed myotis, suitable roosting habitat occurs on the forest in the form of caves and mines. Proper reclamation of mines would ensure potential Townsend's big-eared bat habitat is not lost and provides potential for creation of more suitable habitat that could aid in the recovery of the species.

Sierra Summary

The amount of cliff, cave, and cave-like habitat is not expected to change in the planning area and forest management activities would not substantially affect potential bat roosting habitat. Active mining claims have the potential to increase in the future which could create additional adits and shafts for bat use after the mines have been retired. Suitable primary roosting habitat is available on Sierra National Forest, but it is unknown if the caves or mines there support Townsend's bat populations since maternity colonies have not been observed. The limited occurrence data for this species on the Sierra National Forest, coupled with its wide-ranging nature, suggests it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of Townsend's big-eared bats in the planning area. The Sierra National Forest would have a number of ecosystem-level plan components in place to mitigate risks within its management authority, and intends to ensure bat hibernacula and maternity roosts are protected by installing bat gates or issuing closures to restrict access, but cannot mitigate all threats to persistence.

Birds

American Peregrine Falcon – Sierra

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the American peregrine falcon in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: Multiple ecosystem types containing rocks (canyons, cliffs, ledges, and talus slopes, cliffs), and manmade habitat (buildings, bridges). Falcons breed near open water like lakes, ponds, rivers, or wetlands.

Table D-8. Key Threats, Plan Components and Expected Effects on American Peregrine Falcon

Key Threats to Persistence	Specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss, including nesting and foraging, due to forest management activities.	(Reference Crosswalk for Susceptible to Stochastic Events)	Ecosystem-level components that include desired conditions for forest and riparian habitats help to ensure falcons have adequate habitat for foraging and movement that may otherwise be lost due to climate change and other stochastic events such as high severity fire, insect outbreaks, and large-scale forest mortality. Nesting habitat is not anticipated to be lost due to forest management activities.
Human recreation and other disturbance	(Reference Crosswalk for Disturb Intolerant)	Ecosystem-level recreational goals and guidelines would ensure disturbance to nesting peregrine falcons is minimized through public education, managing recreation activities (such as rock climbing) and planning recreation facilities away from at-risk species breeding habitat. Additionally, implementation of seasonal closures of known nesting rock cliffs during the breeding season could protect peregrine falcons.
Environmental toxins	N/A	National and international coordination to ban harmful pesticides has allowed peregrine falcon populations to recover although some use of toxins may still occur in the peregrine's range. Peregrines would most likely encounter toxins in urban areas and outside the United States. There has been no documentation or observation of poisoning of peregrine falcons on Sierra National Forest.
Illegal take	N/A	Illegal take in the form of shooting or taking chicks or eggs from nests has declined. Illegal take is unlikely on Forest Service and is regulated by law outside the Forest Service's authority.

Key Threats to Persistence

Environmental toxins, habitat loss, human disturbance, and illegal take.

Threats under Forest Service Control

- Habitat loss, including nesting and foraging, due to forest management activities
- Human recreation and other disturbance

Important habitat for peregrine falcons are cliffs for nesting. However, since their recovery from population declines during the 1950s through mid-1970s they have proven to be adaptable nesters moving into urban areas to utilize skyscrapers, bridges, and other man-made structures to successfully rear young. The amount of cliff habitat in Sierra National Forest is not anticipated to change or be lost due to forest management activities.

Areas adjacent and in the national forests are projected to increase in population. This growth is expected to increase recreation demand and numbers of visitors. Impacts from unmanaged recreation are often found in riparian areas, areas adjacent to the urban interface, areas of intense recreation use, and outside of developed recreation sites on the national forests. Examples of unmanaged recreation which might affect peregrine falcon include development of new rock-climbing routes, and dispersed camping in sensitive ecosystems such as riparian areas. In addition, hikers may also cause disturbance by hiking up into peregrine nesting habitat along cliffs areas.

Disturbance of nest from recreational rock-climbing activities may pose a risk. Some key recreation sites on the Sierra National Forest where nesting peregrines have been observed in the past include Shaver Lake, and Tollhouse Rock, which is popular among rock climbers on the forest's western boundary. Overall recreation in the San Joaquin River area is considered light, but rock climbing occurs on the granite walls and domes near the north and middle-forks.

Threats Not Under Forest Service Control

- Environmental toxins
- Illegal take

American peregrine falcon populations declined drastically during the 1950s through the mid-1970s as a result of poisoning, mainly from organochlorine insecticides (USFWS 1999). Following the ban on these pesticides and assisted by peregrine falcon reintroduction efforts, peregrine populations have recovered significantly (NatureServe 2015). Peregrines living in urban areas of California are vulnerable to accumulation of polybrominated diphenyl ethers (PBDEs) (Newsome et al. 2010). These ethers are flame retardants that are used on consumer goods, and have largely been phased out of products due to their detrimental effects on humans and wildlife (Newsome et al. 2010). The PBDEs present in the environment have significantly declined in the San Francisco Bay area due to prohibition of specific fire retardants in consumer goods; likely reducing the threat of PBDEs to peregrine falcon populations in California (Sutton et al. 2014).

Shooting of adults was a problem during the first half of the 1900s, but this activity has almost completely ceased. Primary causes for concern currently include illegal raiding of nests for chicks by falconers (White et al. 2002). Falconers can get permits to legally collect falcons however, this permitting process is outside Forest Service management authority.

Information on Current Distribution of the Species in the Sierra Planning Unit

According to California Department of Fish and Wildlife nest records, approximately 29 nesting attempts were recorded on the Sierra National Forest from 1993-1997 in Fresno and Madera Counties at 6 different sites: Balloon Dome, Fuller Buttes, Tollhouse Rock, Sunset Point, Shuteye Peak, and Garlic Falls. A total of 7 nests successfully fledged 16 young (CDFW data). There are 209 detections for American peregrine falcon in the NRIS database. The eBird database shows 3 different sightings of peregrine falcon on the forest within the last 3 years, including a suspected nesting individual in the vicinity of Shaver Lake (Musick Mountain) in 2016. The Sierra Nevada Bioregional Monitoring Project has been collecting monitoring data since 2009 and had one peregrine observation in 2012 on the Bass Lake Ranger District. Peregrine falcons are known to occur on the eastern boundary of the Exchequer Forest Restoration Project (USDA 2017). Current population trends or occupancy rates for the species on the Sierra National Forest are unknown.

Key Ecological Conditions in Sierra Plan Area

On the Sierra National Forest, cliff nesting habitat within close proximity to high quality foraging habitat (e.g. waterfowl rich lakes and streams) occurs on the High Sierra and Bass Lake Ranger Districts. Shaver Lake, San Joaquin River area, and Bass and Huntington Lakes are popular recreation areas which could also provide ample foraging opportunities and potential nesting habitat. The South Fork San Joaquin River is considered potential peregrine nesting habitat, listed as having outstandingly remarkable value. Additional potential habitat also occurs throughout the North and Middle Forks of San Joaquin River.

The San Joaquin River area is under consideration for Wild and Scenic River Status. Its sheer canyon walls may provide potential nesting habitat for peregrines while river waters attract a variety of potential prey species. Much of the river corridor is in Ansel Adam Wilderness. In total, there are 22 miles of river under consideration. There is also potential peregrine habitat along the middle fork (segment 2) of the Kings River.

Summary

American peregrine falcon is globally secure; however, under the California State ranking some uncertainty exists as to whether it is secure or vulnerable. A population viability analysis found that the peregrine falcon population in California was increasing, with an estimated 210 individuals in 1992 and 350 in 2012 (Wootton and Bell 2014). Peregrine falcons are a current resident of the Sierra National Forest and have been observed foraging and nesting. Data on population trends is unavailable, however, existing habitat is expected to remain stable for this species and forest management activities are not anticipated to negatively affect this species. An increase in recreational climbing is a concern for nesting disturbance during the breeding season but can be minimized by ecosystem-level components to educate the public on environmental issues. In addition, seasonal closures on specific climbing routes with known nesting falcons can be implemented to protect peregrine falcons. Ecosystem-level components should maintain or restore ecological conditions to contribute to maintaining a viable population in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection. Additionally, optional management approaches such as implementing seasonal closures when nests are active would further ensure persistence of a viable population.

Bald Eagle¹¹ – Sequoia/Sierra

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the bald eagle in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: Large bodies of water or free flowing large rivers with adjacent large trees or snags.

¹¹ Also protected under the Bald and Golden Eagle Protection Act of 1940

Table D-9. Key Threats, Plan Components and Expected Effects on Bald Eagle

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Human recreation and related disturbance.	(Reference Crosswalk for Disturb Intolerant)	Ecosystem-level desired conditions minimize disturbance from recreation related activities and human activities on sensitive resources. Guidelines constrain impacts on resources including at-risk species breeding habitat in recreation areas and ensure the needs of at-risk species, such as bald eagles, would be accounted for during recreation design.
Habitat loss and loss of key components such as perches, roosting, and nesting trees due to forest management activities	Guideline (SPEC-FW-GDL) 02 Known nest, roost, or den trees used by species of conservation concern, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the reasonably unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements.	Ecosystem-level plan components ensure that large trees and snags necessary for nesting and roosting and perching would be retained during project implementation and that large trees and snags are resilient to natural disturbance such as fire, insects and disease. Plan components also help to ensure that a supply of trees in the larger size classes is distributed across the forest at levels that would provide sustainable nest/roost habitat for bald eagles cross the landscape. A species-specific guideline further reinforces the retention of known nest and roost trees used by bald eagles or other raptors.
Habitat loss: changes in water quality and availability forest management activities, and hydroelectric power.	(Reference Crosswalk or Open Water Dependent, Riparian/Water Dependent)	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they are high quality and provide adequate prey for bald eagles. Specific guidelines for at-risk species promotes design features to bald eagles at-risk during project implementation. Expansion of hydropower development is unlikely on Sequoia National Forest due to being already fully developed.
Habitat loss or degradation due to climate change, widespread tree mortality, or other stochastic events.	(Reference Crosswalk for Susceptible to Stochastic Events, Open Water Dependent, Riparian/Water Dependent)	Ecosystem-level desired conditions and goals provide for ecological integrity of aquatic and riparian resource so that they are resilient to climate change and other demands and can provide the foraging habitat and prey species necessary for bald eagles.

Key Threats to Persistence

Habitat loss, human disturbance, and energy development.

Threats Under Forest Service Control

- Human recreation and related disturbance.
- Habitat loss and loss of key components such as perches, roosting, and nesting trees due to forest management activities

Fishing opportunities and recreation uses are expected to continue and impacts from those activities would continue to occur. The California Department of Fish and Wildlife is expected to continue the fish stocking program. Reservoirs would continue to exist under current management and jurisdiction to fulfill their water storage and hydroelectric needs.

Recreational use of private planes, ultra-lights, gliders, and hang gliders can be observed over the Sequoia National Forest and may pose a disturbance risk to eagles. Lake Isabella is an authorized seaplane landing area.

Most of the threats for bald eagle on the Sequoia and Sierra National Forests can be addressed in the form of desired conditions that emphasize sustainable recreation and that minimize human disturbance (Reference Crosswalk for Disturb Intolerant). Desired conditions, goals, and guidelines for Terrestrial Ecosystems and Watersheds minimize habitat loss and emphasize the retention of large trees and snags that provide nest sites and suitable perches for hunting.

In addition, forestwide species direction were added to further emphasize the retention of key habitat components such as roosting and nesting trees for raptors during project implementation. A forestwide guideline SPEC-FW-GDL 02 places additional emphasis on the protection of at-risk species habitat by ensuring appropriate design features, mitigation, and project timing considerations are incorporated into projects that may affect their habitat.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change, widespread tree mortality, or other stochastic events.
- Habitat loss or changes in water quality and availability from hydroelectric power

Population growth has led to increased competition for water among various uses which can negatively impact bald eagle nesting behavior. Dams and diversions on and around both Forests have impacts on watershed conditions within the Forests. While controlling impacts from dams and hydroelectric use is beyond Forest control, ecosystem-level plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.

Large scale uncharacteristically severe wildfires are expected to increase in frequency and intensity due to climate change. Risk of loss of habitat and habitat fragmentation of conifer forest from wildfire outside the natural range of variability pose the greatest threat to bald eagle persistence. Past fire suppression policies have led to conditions that can result in large areas of high severity fire that may be detrimental to species that use old growth forest components. Compared to past conditions, forest density is greater, tree canopy is denser, and small and medium trees are more dominant in the forest. Large tree mortality has doubled in the last 2 to 3 decades across the western United States. This pattern is associated with increases in temperature and droughts. Both National Forests have been experiencing extreme drought and insect related (e.g. bark beetles, fir engravers) tree mortality. Tree mortality has been consistent across all major conifer with the most dramatic effects on fir species and ponderosa and Jeffrey pine. The ecosystem-level plan components aim to restore forest habitats to the natural range of variation and provide habitat resilience to climate change stressors. However, the Forest Service cannot entirely remove the threat of climate change and associated habitat loss which would continue to threaten species of conservation concern such as the bald eagle.

Sequoia – Bald Eagle

Information on Current Distribution of the Species in the Sequoia Planning Unit

There are 63 records of 89 individual Bald eagle in the NRIS database, of those records, two were documented as reproducing in 1992 and 2010. The most recent sighting was not a nesting pair but rather an adult and juvenile. The most recent observations of bald eagle were in 2017. Recent sightings do not include nesting activity. There are no CNNDDB records for bald eagle on the forest. In eBird, there are numerous bald eagle sightings in the vicinity of Lake Isabella.

Key Ecological Conditions in Sequoia Plan Area

Bald eagles utilize large conifer stands where there is access to open water or free flowing rivers for foraging, typically within one mile of large trees, snags, or dead top trees. These conditions can be largely found in the Montane Zone dominated by mixed conifer and ponderosa and Jeffrey pine forests across most of the zone. Additional habitat can be found in the Upper Montane Zone where snow is the primary form of precipitation. Red fir forests with Jeffrey pine occur on the rockier sites in the northern half of the forest. In the southern half of the forest, red fir is replaced by white fir.

Sequoia Summary

Bald eagles are currently known to use the Sequoia National Forest for wintering and migration. Habitat loss resulting from high intensity fires and bark beetle outbreaks continues is a potential threat. Disturbance from recreationists and extensive use and development along the shores of Lake Isabella is perhaps the biggest risk factor affecting bald eagles on the Sequoia National Forest, since there are few natural lakes. This threat would continue to be a potential risk factor for this bald eagles, as human population levels and recreation activity are expected to increase. Ecosystem-level components to promote sustainable recreation and protect at-risk species will alleviate but not fully eliminate human disturbance. However, during the life of the forest plan, ecosystem-level components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of bald eagle within its range. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Sierra – Bald Eagle

Information on Current Distribution of the Species in the Sierra Planning Unit

Bald eagles occur in Sierra National Forest throughout the year especially at or near reservoirs, lakes and large rivers. Bald eagles are also known to winter along the middle fork of the Kings River. Most recently, winter observations were recorded at: Bass Lake; Shaver Lake; Mammoth Pool Reservoir; Redinger Lake; Lake Edison; and Florence Lake (Southern California Edison Company 2011). Five active night roosts were identified in 2011 at three of the reservoirs. Nesting was documented at four of six reservoirs surveyed in 2011. Known nest sites are at Bass and Shaver Lakes, and Lake Edison. The Sierra National Forest has 852 records for bald eagle in the NRIS database (many of these records occur at the same location but were collected at different times). According to the forest plan draft environmental impact statement, the bald eagle population in the southern Sierras is believed to be stable or slightly increasing and the Sierra National Forest Assessment also notes the population as stable to possibly increasing on Sierra National Forest (United States Department of Agriculture 2019b).

Key Ecological Conditions in Sierra Plan Area

Bald eagles utilize large conifer stands where there is access to open water or free flowing rivers for foraging, typically within one mile of large trees, snags, or dead top trees. In the Sierra National Forest there are more than 1,500 miles of stream occupied by fish, 11 large reservoirs (greater than 150 acres), and 7,500 acres of lakes distributed across the forest. There are reservoir fisheries; high mountain lake fisheries; and both warm and cold-water fisheries which provide a variety of fish species for bald eagles. Reservoir fisheries exist where hydroelectric power development or flood control dams were established and created lakes.

Sierra Summary

Bald eagles are currently known to use the Sierra National Forest for wintering and nesting or breeding. According to the Sierra National Forest assessment, the bald eagle population on Sierra National Forest is currently stable and possibly increasing. However, recent widespread tree mortality related pose a considerable risk to availability of the large trees, and habitat loss resulting from high intensity fires continues to be a potential threat. Increases in recreation as human population continues to grow also poses disturbance impacts to nesting eagles. Ecosystem-level components to promote sustainable recreation and protect at-risk species would alleviate human disturbance. Ecosystem-level components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

California Spotted Owl – Sequoia/Sierra

Determination: The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the spotted owl in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the spotted owl in the plan area.

General Key Ecological Conditions: Coniferous and mixed pine-oak forests containing old growth characteristics (dense vegetation and canopy cover, snags, cavities, larger trees and large down woody debris).

Table D-10. Key Threats, Plan Components, and Expected Effects on California Spotted Owl

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation or loss of connectivity due to management activities such as fuels reduction, vegetation treatments, and timber harvest.	<p>(Reference Crosswalk for Susceptible to Stochastic Events, Forest Dependent, Large Tree/Snag Dependent, Old Growth Dependent, Complex Early Seral Habitat Dependent)</p> <p>Desired Condition (SPEC-CSO-DC) 01 California spotted owl protected activity centers provide high quality habitat that contributes to their successful reproduction. Protected activity centers encompass habitat that is most likely essential for nesting and roosting. The habitat has a high canopy cover with multiple layers of</p>	Species-specific plan standards and guidelines provide direction for maintaining habitat in areas where management activities take place. Standards and guidelines ensure key old growth components including large trees, snags and structural heterogeneity are maintained during vegetation management activities in old growth forest, roost/nest trees are protected and maintained, and direction from existing habitat conservation strategies is used where applicable. Desired conditions and guidelines for fire

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Same as above.	<p>tree canopy and many large trees and snags</p> <p>Desired Condition (SPEC-CSO-DC) 02 Within protected activity centers, canopy cover, basal area, and large tree density tends towards the upper end of the range of forest vegetation desired conditions.</p> <p>Desired Condition (SPEC-CSO-DC) 04 At least 40-60% of each occupied California spotted owl territory consists of the highest quality nesting and roosting habitat. These acres are in large enough patches to provide interior stand conditions, generally 1-2 tree heights from an edge. For areas where multiple territories comprise >75% of a watershed (typically a HUC 8 unit and > 10,000 acres in size) the desired condition is to maintain at least 30-50% of the watershed in the mature tree habitat at moderate and high canopy cover.</p> <p>Desired Condition (SPEC-CSO-DC) 05 The Forest supports conditions for a sustainable network of dynamic, resilient, and widely distributed California spotted owl nest or roost sites across heterogeneous landscapes.</p> <p>Standard (SPEC-CSO-STD) 01 Do not mechanically treat within the 10-acre area surrounding the nest, or known roost site where nest site is unknown.</p> <p>Standard (SPEC-CSO-STD) 02 Mechanical vegetation treatments that do not reduce habitat quality are allowed within protected activity centers. However, mechanical vegetation treatments that reduce habitat quality are limited to no more than one third of the protected activity center. If habitat quality reduction is necessary, treatment must increase the stand quadratic mean diameter and maintain a minimum of 50% canopy cover, habitat quality must be maintained in the highest quality nesting and roosting habitat (CWHR 6, 5D, 5M), and habitat quality must increase again post treatment.</p> <p>Standard (SPEC-CSO-STD) 03 In California spotted owl territories, design vegetation treatments to retain clumps or groups of large trees, some with dense tree cover, in a well-distributed and irregular pattern. Design treatments for individual trees, clumps of trees, and openings and focus on promoting large trees greater than 24 inches in diameter and especially very large trees 30 inches in diameter or larger. In territories that do not currently meet the</p>	<p>and timber management promote ecological restoration practices that would improve forest resilience and maintain spotted owl habitat.</p> <p>Species-specific desired conditions, standards and guidelines ensure protected activity centers and nest site conditions are provided for during vegetation and fuels treatments, high severity prescribed fire is minimized, and vegetation treatment operating periods are limited during the breeding season. Land management activities support conditions for survival and reproduction of owls.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Same as above.	<p>territory desired condition (DC-04), do not reduce habitat quality in the existing large tree habitat (CWHR 5D and 5M) wherever it exists in the territory.</p> <p>Exception:</p> <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ where there is no overlap the WHMA <p>Standard (SPEC-CSO-STD) 04 For all treatments within protected activity centers, maintain connectivity between the rest of the protected activity center and habitat around the known nest site or, where the nest site is not known, the most recent known roost site.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply to community buffers. <p>Standard (SPEC-CSO-STD) 05 Where prescribed fire is used in protected activity centers, apply mitigation measures as needed to minimize loss of or damage to known nest and roost trees.</p> <p>Standard (SPEC-CSO-STD) 06 Where prescribed fire is used in California spotted owl territories, design burns so high-severity burn patches are generally less than 10 acres in size and do not exceed 100 acres to minimize long-term impacts on habitat.</p> <p>Standard (SPEC-CSO-STD) 07 Design fuels treatments in protected activity centers to manage for lower intensity fire effects (generally flame lengths averaging 4 to 6 feet) to reduce surface and ladder fuels and minimize impacts to overstory canopy, which will provide conditions for continued use of nesting and roosting.</p> <p>Guideline (SPEC-CSO-GDL) 01 To minimize disturbance that may lead to breeding failure, during the breeding season (March 1 to August 15 or following current regional guidance) apply a limited operating period prohibiting:</p> <ol style="list-style-type: none"> a) mechanical harvest within approximately 0.25 mile of the nest or known roost site; b) Prescribed burning within 500 feet of the nest <p>The limited operating period may be modified or waived:</p> <ol style="list-style-type: none"> 1. Waived if nesting owls are absent. 2. Waived for activities addressing public safety issues. 	Same as above.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Same as above.	<p>3. Waived for activities of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location.</p> <p>4. The limited operating period buffer distance may be modified based upon a biologist's evaluation of the area needed to shield a nest site from disturbance considering topographic features, vegetation or other screening.</p> <p>5. Waived or modified when benefit to California spotted owl habitat resilience outweighs potential short term risk</p> <p>6. Waived or modified in up to 10% of PACs per year per national forest where necessary to facilitate the benefits of using early season prescribed fire</p> <p>Exceptions:</p> <ul style="list-style-type: none"> • Does not apply in community buffers where they do not overlap WHMA <p>Suitability (SPEC-CSO-SUIT) 01 California spotted owl protected activity centers are not suitable for timber production. Timber harvest is allowed for other multiple use purposes including safety, and restoration towards desired conditions</p>	Same as above.
Habitat or connectivity loss resulting from widespread tree mortality, climate change and other stochastic events.	<p>(Reference Crosswalk for Susceptible to Stochastic Events)</p> <p>Desired Condition (SPEC-CSO-DC) 03 Where the majority of a California spotted owl protected activity center contains dry vegetation types, the vegetation is resilient towards fire, drought, insects and pathogens, and is trending towards terrestrial ecosystem desired conditions</p> <p>Guideline (SPEC-CSO-GDL) 02 Use information on occupancy and based upon areas with the highest risk of large-scale, high severity wildfire or severe tree mortality from insects and drought when prioritizing protected activity centers for treatment where treatment is deemed necessary.</p> <p>Priority based on occupancy:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 	<p>The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, forest plan components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.</p> <p>Species-specific components ensure the spotted owl would have adequate habitat which is resilient to fire, drought, insects and diseases and trending toward desired conditions.</p> <p>Desired conditions emphasize resilience in spotted owl habitat and promote old forest habitat components such as larger trees, snags and coarse woody debris and structures for nesting. An adaptive approach to management would help maintain habitat under uncertain and changing conditions.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Same as above.	3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive. Design treatments to maintain and promote the highest quality nesting and roosting habitat available. Exceptions: <ul style="list-style-type: none"> • Does not apply in community buffers • Does not apply to CWPZ where there is no overlap the WHMA 	Same as above.
Habitat competition and hybridization with barred owls	N/A	There are no forest management activities that can alleviate barred owl hybridization. This threat would continue.
Pesticides	Goal (SPEC-FW-GOAL) 06 Coordinate with local, state, and federal law enforcement and other agencies to remove and remediate poisonous substances and pesticides associated with marijuana cultivation in the wildland.	Remediation and enforcement on illegal marijuana plots to remove poisonous substances would benefit owl species by increasing prey and reducing inadvertent poisoning.

Key Threats to Persistence

Habitat loss, degradation, or loss of connectivity from high severity fire and management activities such as timber harvest; expansion of barred owls, climate change, pesticides and carbonates, and reduced genetic diversity.

Threats Under Forest Service Control

- Habitat loss (especially loss of nesting, resting and foraging habitat, large old trees and dense canopy cover) or loss of connectivity and disturbance due to management activities such as fuels reduction, vegetation treatments, and timber harvest.

The Sequoia and Sierra National Forest essentially abandoned even-aged reforestation management 20 years ago, in favor of stand maintenance thinning harvests intended to control density and growth of stands, generally for habitat maintenance. Thinning reduces the number of trees on a site, allowing remaining trees to increase crown and photosynthetic production, and increases growth rates on those remaining trees.

There are over 20,000 acres of plantations on the Sequoia National Forest in need of treatment that would allow the stands to develop old forest conditions. The treatments are needed to reduce fuel loading, reduce inter-tree competition, and improve the species mix within the stands. While these plantations contain some saw log size material, the majority of the trees are only suited for biomass. There are few projects that provide adequate volume to potential markets to make the projects commercially viable. This limits the forest's ability to keep up with the pace and scale necessary to realize restoration benefits.

Most of the threats for California spotted owl can be addressed through plan components that emphasize resilient, connected forests characterized by complex structural attributes such as closed canopy, large old trees, snags and coarse woody debris, which owls need for movement, foraging and reproduction. However, species-specific plan components for additional protection to maintain and conserve protected activity centers. These species-specific plan components were added to focus on specific spotted owl habitat needs, like nesting and roosting habitat. Loss of old growth habitat and key structural attributes such as dense canopy and large trees for nesting and roosting are key threats and desired conditions specifically added for California spotted owl ensure spotted owl habitat is well distributed throughout the landscape providing for foraging, nesting, and roosting habitat; promoting movement across large landscapes and ensuring protected activity centers maintain the best quality habitat for nesting and roosting including habitat with canopy cover that may be outside the natural range of variation. Standards and guidelines place constraints on operating periods for forest treatments and activities that might disturb nesting owls in protected activity centers during the breeding season, ensure mechanical treatment of vegetation is limited, and that overstory trees and trees greater than 24 inches in diameter are generally retained during forest management activities. In addition, potential management approaches provide guidance when prioritizing owl protected activity centers for restoration, to consider the risk of large high intensity wildfire, degree of departure from desired conditions, and occupancy/reproductive status and history.

Threats Not Under Forest Service Control

- Habitat competition and hybridization with barred owls
- Habitat or connectivity loss resulting from widespread tree mortality, climate change and other stochastic events.
- Barred owls are an increasing risk factor for California spotted owls in the Sierra Nevada. Barred owls can hybridize and also outcompete spotted owls. Barred owls were first recorded within the range of the California spotted owl in 1989 on the Tahoe National Forest. Two sparrowed owls (hybrids of spotted and barred owls) were reported in the Eldorado National Forest during 2003 to 2004 (Seamans, Corcoran, and Rex 2004). Barred owls were first recorded in the southern Sierra Nevada in 2004 (Steger, Werner, and Munton 2006). Ongoing research has documented 73 records of barred or sparrowed owls in the Sierra Nevada to date, with the majority of records from the northern Sierra Nevada (Tahoe, Plumas, and Lassen National Forests). Five new records of barred owls were documented in the Stanislaus and Sierra National Forests in 2012, indicating further range expansion of barred owls in the southern Sierra Nevada. In 2017, confirmed barred owls were documented on the Sequoia National Forest. Barred owl numbers are likely higher than documented in the Sierra Nevada, as there have been no systematic surveys for them to date.
- Past forest suppression policies have led to conditions that can result in large areas of high severity fire that may be detrimental to old forest species such as the California spotted owl. There is some uncertainty about the effects of fire severity on these species (Keane 2014) and (Zielinski, Thompson, et al. 2013), however, current science suggests strategically placed landscape treatments can reduce fire severity and spread, and that combining these fuel treatments with prescribed and managed fire can effectively reduce the extent of high-intensity fires in the Sierra Nevada under most conditions (Gutiérrez, Manley, and Stine 2017). Spotted owls appear to respond well to low-moderate severity fire.

- The Sequoia and Sierra National Forests have experienced extreme drought and insect related (e.g. bark beetles, fir engravers) mortality and this is expected to continue. Mortality has been consistent across all major conifer with the most dramatic effects on fir species and ponderosa and Jeffrey pine. Statewide trends in 2017 showed that many areas experienced mortality at higher elevations where it had not been mapped previously, compared to previous years where most of the extensive mortality was observed in lower elevation pine and mixed conifer forests.

Climate change further exacerbates drought conditions and insect outbreaks, which can lead to uncharacteristically large wildfire. While the Forest Service cannot directly control climate change, ecosystem plan components provide conditions resilient to ecosystem stressors and the interrelated effects of climate change.

Overall, connectivity of old-forest associated species like spotted owl is high, but vulnerable to uniform, high intensity fire during more severe weather conditions. Weather conditions conducive to intense fire are already increasing with climate change and are expected to increase more in the near and distant future. (Schwartz et al. 2013) evaluated future climate exposure to vegetation using downscaled climate projections for the southern Sierra Nevada, including the Sierra and Sequoia National Forests. Their results indicate a high proportion of all terrestrial ecosystems will be moderately, highly, or extremely vulnerable to future climate by the end of the century. An assessment of species-specific exposure and sensitivity to climate change using two models ranked California spotted owls as “presumed stable” (Siegel et al. 2014).

Sequoia – Spotted Owl

Information on Current Distribution of the Species in the Planning Unit

There are 2,352 records of California spotted owl in the NRIS database with 3,285 individuals recorded between 1900 and 2017. Many of these may be repeat observations of the same individuals from year to year. Within the administrative area of the Sequoia National Forest, there are 136 currently active spotted owl protected activity centers; 66 occur within the plan area and the remainder within Giant Sequoia National Monument. Population trends on the Sequoia National Forest are unknown. A recent synthesis by (Gutiérrez, Manley, and Stine 2017) found that spotted owl populations in the Sierra Nevada were declining on most landscapes. An exception is the southernmost monitoring site, located within Sequoia/Kings Canyon National Parks. This site is in close proximity to the plan area and may best represent the population trend of spotted owls in the southern Sierras.

Potential habitat (excluding private land) for California spotted owls on the Sequoia National Forest is demonstrated by the California Wildlife Habitat Relationships habitat types. Mature conifer forests (CWHR 4, 5, and 6) with canopy cover greater than 70 percent that include a large tree component are ecological conditions for California spotted owl. Approximately 278,800 acres of forest are classified as having dense cover (60-100 percent closure) and 269,500 acres have moderated cover (40-59 percent) that could support species such as spotted owls. There are approximately 124,700 acres of forest containing California Wildlife Habitat Relationships size classes greater than 24 inches that could support spotted owl (United States Department of Agriculture 2013a).

California spotted owl habitat on the Hume and Western Divide Ranger Districts of Sequoia National Forest is varied. The majority of nest and roost sites occur in mid slope regions between

4,000 and 7,500 feet in Sierra mixed conifer, montane hardwood conifer, and giant sequoia vegetation types, which support flying squirrels as a main prey source. At the lowest elevations in the oak woodland belt, owls can be found along canyon ravines within stringers of canyon live oak and most commonly consume woodrats.

The southernmost Kern River Ranger District on the Sequoia National Forest is a transition zone between the southern Sierra Nevada, desert environments to the east that do not support spotted owls and spotted owl populations that occupy small pockets of suitable habitat on isolated mountains in southern California and the coast range. Spotted owls in this transition zone nest from low elevation pockets of live oak at 1,000 feet up to successful nests at over 9,000 feet in elevation. However, the majority of known owl territories are in the black oak-conifer transition at 4,500 feet up to the mixed conifer- red fir transition near 8,500 feet. This district is comprised of a number of mountain ranges with unique characteristics, such as the Greenhorns, Breckenridge, and Piute Mountains, and the Kern Plateau.

The Greenhorn Mountains are an extension of the west side Sierra Nevada mixed conifer habitats. The Greenhorns are primarily dense, second-growth fir and cedar that resulted from pre-1900 timber harvest and fire exclusion. These habitats appear to support a full spotted owl population that is connected to the rest of the Sierra Nevada spotted owl population. Breckenridge Mountain and the Piute Mountains are isolated from the Greenhorn populations by gaps of several miles of unsuitable habitat. Both Breckenridge and the Piutes are further isolated by loss of habitat to large, stand replacing fires. These areas also have lower quality habitat that is closer to east-side Sierran pine due to poor site quality and lower mean annual precipitation. The owl territories on these mountains are few and widely separated due to habitat limitations.

Key Ecological Conditions in Plan Area

The mixed conifer habitat, and to a lesser extent montane hardwood forest types in this zone, provide the majority of habitat within California spotted owl protected activity centers on the Sequoia National Forest. Tree species typically include ponderosa pine, sugar pine, incense cedar, and white fir. Black oak is an important component of many mixed conifer stands, particularly at the lower elevations and on drier aspects (south and west). Dense canopy, snags and large down coarse woody debris are critical for spotted owl nesting and prey habitat.

Sequoia Summary

The best available science indicates declining population trends throughout the range of the California spotted owl as a result of low reproductive success, high juvenile mortality, and habitat specificity. These life history characteristics combined with relevant threats and stressors, including habitat loss resulting from high-severity fires and the expansion of barred owls, indicate substantial concern about the California spotted owl's capability to persist over the long term. Climate change and potential drought-related effects will likely continue to exert pressure on the key ecological conditions that this species depends upon.

The final set of ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of California spotted owl within the plan area for the duration of the forest plan but due to primary threats outside the Forest Service's control, populations are expected to continue declining. Although it is unlikely California spotted owls would experience substantial species recovery or expansion due to continuing primary threats (such as barred owl expansion, climate change, and widespread tree mortality) ecosystem-level components to protect and enhance

California spotted owl habitat would maintain existing populations within Sequoia National Forest.

Sierra – Spotted Owl

Information on Current Distribution of the Species in the Planning Unit

The Sierra National Forest has conducted surveys for spotted owl presence and reproductive status across the forest since the early 1980s. The Sierra National Forest has 240 designated California spotted owl protected activity centers and 240 home range core areas. There are 5,485 records of spotted owl in the NRIS database distributed across the forest with heavy concentrations south of Shaver Lake. On the Sierra National Forest, approximately 50 percent of the overall protected activity centers acreage is in the mixed conifer vegetation type. Analyses on population trends using data from 1990-2013 suggest the Sierra National Forest study populations may have declined (Gutiérrez, Manley, and Stine 2017).

Potentially available habitat as classified by the California Wildlife Habitat Relationships (acres in parentheses) includes the following vegetation types: Ponderosa Pine (73,574), Montane Hardwood Conifer (77,455), Jeffrey Pine (28,585), Hardwood (148,049), Red fir (141,303), Sierra Mixed Conifer (269,921) and White fir (2,556).

According to recent mapping efforts, the largest habitat coverages which contain potential spotted owl habitat conditions on the Sierra National Forest are mid-seral coniferous forests (20 percent), hardwood and mixed hardwood/conifer forests (15 percent), and late seral closed canopy coniferous forests (12 percent).

Key Ecological Conditions in Plan Area

On the Sierra National Forest, the ecological conditions for spotted owl can be found in the mixed conifer dominated montane zone. Tree species typically include ponderosa pine, sugar pine, incense cedar, and white fir, and some Douglas-fir. Black oak is an important component of many mixed conifer stands, particularly at the lower elevations and on drier aspects (south and west).

Sierra Summary

The best available science indicates declining population trends throughout the range of the California spotted owl as a result of low fecundity, high juvenile mortality, and habitat specificity. These life history characteristics combined with relevant threats and stressors, including habitat loss resulting from high-severity fires and the expansion of barred owls, indicate substantial concern about the California spotted owl's capability to persist over the long term. Climate change and potential drought-related effects would likely continue to exert pressure on the key ecological conditions that this species depends upon.

The ecosystem plan components and the additional species-specific plan components, when carried out, would provide the necessary ecological conditions to maintain a viable population of California spotted owl within the plan area for the duration of the ecosystem-level but due to primary threats outside the Forest Service's control, populations are expected to continue declining. Although it is unlikely California spotted owls would experience substantial species recovery or expansion due to continuing primary threats (such as barred owl expansion, climate change, and widespread tree mortality) ecosystem-level components to protect and enhance California spotted owl habitat would maintain existing populations within Sierra National Forest.

Great Gray Owl – Sequoia/Sierra

Sequoia Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the great gray owl in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Sierra Determination: The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the great gray owl in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the great gray owl in the plan area.

General Key Ecological Conditions: Meadows and early seral-stage openings that support sufficient prey which are adjacent to mature coniferous forests with large-diameter trees and snags for nesting.

Table D-11. Key Threats, Plan Components and Expected Effects on Great Gray Owl

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat (mature forest and meadows), along with loss of connectivity due to management activities such as vegetation treatments, livestock grazing, and timber harvest.	<p>(Reference Crosswalk for Forest Dependent, Old Growth Dependent, Wet/Riparian Meadow Dependent, and Large Tree and Snag Dependent)</p> <p>Desired Condition (SPEC-GGO-DC) 01 Habitat within great gray owl protected activity centers provide high quality habitat for nesting and roosting that contributes to their successful reproduction. The habitat has forested areas with high canopy cover, multiple layers, and many large trees and snags. Meadow habitat in a protected activity centers supports a sufficient prey species populations to provide a food source for great gray owls through the reproductive period, and natural structures at the edges of meadows to provide opportunities for hunting perches.</p> <p>Desired Condition (SPEC-GGO-DC) 02 Great gray owl territory habitat includes forested areas with upper natural range of variation target of large conifer snags or large live oaks.</p> <p>Guideline (SPEC-GGO-GDL) 01 In meadow areas of great gray owl protected activity centers, manage to enhance habitat for prey species.</p> <p>Guideline (SPEC-GGO-GDL) 02 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (typically February 15 to August 15, or following current Regional guidance), apply a limited operating period of an active great gray owl nest stand (i.e.,</p>	<p>Ecosystem-level plan components ensure great gray owl would have adequate habitat for movement, dispersal, feeding, and reproduction and provide direction for maintaining key habitat elements such as large conifers in areas where management activities take place and ensure wildfires are allowed to burn within the natural range of variability and contribute to ecosystem function. Specific measurable objectives move meadow habitat toward desired conditions necessary to support adequate prey species. Management Area direction for backroad recreation promotes desired conditions for species diversity and movement corridors and large wild tracts of land in undeveloped landscapes.</p> <p>Great gray owl specific guidance provides additional emphasis on retention of key habitat features such as nest trees and encourages the use of approved conservation strategies in project design and emphasizes habitat that improves conditions for great gray owl.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Same as above.	<p>not during an inactive nesting year) prohibiting:</p> <ul style="list-style-type: none"> a) Road construction or extensive heavy mechanized equipment within approximately 0.25 miles of the nest or known roost site; b) Power equipment like chainsaws or pole pruners within 300 feet, of the nest site or known roost site; c) Discretionary low level helicopter flights over nests; d) Discretionary landing of helicopters within 0.25 mile of the nest; or e) Extensive hand tool activities like fire line construction for prescribed burning within 300 feet of the nest site <p>The limited operating period may be waived for vegetation treatments of limited scope and duration, if a biologist determines chicks have fledged, or that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be reduced.</p> <p>Exceptions:</p> <p>Does not apply in community buffers where they do not overlap WHMA</p> <p>Guideline (SPEC-GGO-GDL) 03 To provide habitat used by fledglings, retain or recruit pockets of dense canopy cover (greater than 65 percent) around nests and retain some low-hanging limbs, within 650 feet (200 meters) of a nest tree or activity center.</p> <p>Exceptions:</p> <p>Does not apply in community buffers</p> <p>Does not apply to CWPZ where there is no overlap with WHMA</p> <p>Standard (RANG-FW-STD) 01 Manage livestock grazing to attain desired conditions in blue oak-interior live oak woodlands, annual grasslands, aspen, special habitats, great gray owl protected activity areas, occupied willow flycatcher habitat, and riparian conservation areas. Where livestock grazing is found to prevent or retard attainment of desired conditions, modify grazing practices (such as number of livestock, timing, scheduled rest, and range structures). If adjusting practices is not effective, remove livestock from the area using appropriate administrative authorities and procedures.</p>	Same as above.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of quality meadow and other open habitat due to conifer encroachment	(Reference Crosswalk for Aquatic and Riparian Dependent)	Ecosystem-level plan components ensures owls would have adequate meadow and open habitat that supports sufficient prey species like gophers and voles. Conifer encroachment is minimized, and specific, measurable objectives move meadow conditions toward desired conditions.
Loss of early seral habitat	(Reference Crosswalk for Complex Early Seral Habitat Dependent)	Ecosystem-level plan components support early seral habitat for prey species. Desired conditions ensure complex early seral habitats are distributed across the landscape and key habitat elements such as large diameter snags are available for resting habitat. Guidelines ensure restoration projects maintain ecosystem integrity, important wildlife habitat, and that large fires minimize harvest to provide areas of complex early seral habitat for great gray owl and other species that need them.
Recreation disturbance, vehicle strikes due and other human disturbance	(Reference Crosswalk for Disturb Intolerant)	Direction for sustainable recreation desired conditions ensure recreation would address adverse impacts to great gray owl.
Small population size	N/A	There are no forest management activities that can directly increase population size. Plan components to improve habitat and protect breeding individuals would ensure great gray owls reproductive success would not further be impaired by forest management activities.
Loss of quality habitat due to climate change or other stochastic events, which result in a reduction in snowpack and mature forest conditions.	(Reference Crosswalk)	Ecosystem-level plan components ensures great gray owl would have adequate habitat for movement, dispersal, feeding, and reproduction that may otherwise be lost due to climate change and other stochastic events. Desired conditions for terrestrial ecosystems support habitat that is complex and supports movement and connectivity for old growth specialists. Desired conditions emphasize resilience and promote old growth habitat components such as larger trees, snags and coarse woody debris and structures for nesting such as witches' brooms

Key Threats to Persistence

Small population size; meadow and adjacent forested habitat degradation or loss from fires and management practices including livestock grazing and timber harvest; vehicle strikes; climate change; and human disturbance.

Threats Under Forest Service Control

- Loss of habitat (mature forest and meadows), along with loss of connectivity due to management activities such as vegetation treatments, livestock grazing, and timber harvest.
- Loss of quality meadow and other open habitat due to conifer encroachment.
- Loss of early seral habitat
- Recreation disturbance, other human disturbance and vehicle strikes due to low perching behavior.

There are over 20,000 acres of plantations on the Sequoia National Forest in need of treatment that would allow the stands to develop old forest conditions. Treatments are needed to reduce fuel loading, reduce inter-tree competition, and improve the species mix within the stands. However, low timber profits and other factors limits the forests' ability to keep up with the pace and scale necessary to realize restoration benefits. Forestry practices that remove trees greater than 24 inches dbh and thinning nest stands (typically 50 acres in size) to below 65 percent canopy cover have the potential to degrade great gray owl nesting habitat.

Past fire suppression policies have led to conditions that can result in large areas of high severity fire that may be detrimental to old forest species. The Sequoia and Sierra National Forests essentially abandoned even-aged reforestation management 20 years ago, in favor of stand maintenance thinning harvests intended to control density and growth of stands, generally for habitat maintenance. Current plan guidance requires protected activity centers of at least 50 acres of the highest quality nesting habitat be established around all known great gray owl nest stands to mitigate risk from forest management activities. These areas generally have a limited operating period during the nesting period (typically March 1 to August 15), prohibiting vegetation treatments and road construction within ¼ mile of an active great gray owl nest stand.

Fire suppression and uncharacteristic wildfire can alter the structure and composition of the forest interface near meadows. Decreasing trends in early seral and complex early seral habitat, which can provide foraging opportunities, are most likely due to past fire suppression and salvage logging efforts. These past management practices can put forest edge habitat adjacent to meadows at particular risk.

Livestock grazing can affect the key ecological conditions of meadows and riparian areas by changing vegetation height over the summer and by affecting riparian vegetation. Current trends in the number of livestock grazing show a decrease in livestock numbers since the 1960s (United States Department of Agriculture 2013b). Lingering effects of past meadow impacts remain, especially where water tables have lowered. Some meadows have had active restoration projects.

Recreation and activity related disturbance can cause nest failure during the breeding season. Primary roads can also cause direct mortality due to low perching behavior of owls and foraging near roads. Public use of forest roads has grown steadily and driving for pleasure is the single largest recreation use of Forest Service managed lands. This poses a risk to great gray owls flying low over roadways in search of prey. There is no confirmed road related mortality on the Sequoia National Forest, however increasing population and recreational use would continue to be a risk factor. There is no road that crosses the mountains on the Sierra National Forest, however, State Highway 41 and State Highway 140 access the northern half of the forest and State Highway 168 access the southern portion. The forest has approximately 180 miles of double lane paved roads which are considered main line arterials. The forest also has two Forest Service designated

national scenic byways. Incidental mortalities can occur. Population growth in many of the counties is expected to increase demand for recreation opportunities on the Sequoia and Sierra National Forest and may increase human-wildlife interactions.

Threats Not Under Forest Service Control

- Small population size.
- Loss of quality habitat due to climate change or other stochastic events, which result in a reduction in snowpack and mature forest conditions.

The great gray owl population in California is at-risk because it is very small (Hull et al. 2010). Small populations are more susceptible to inbreeding, population bottleneck, and founder effects. Retention of defective genes or the loss of adaptive genes can lead to reduced genetic diversity (Shaffer 1981) and (Lande 1993) and small populations are less able to recover from losses due to environmental events such as large wildfires (Wu et al. 2016b).

Great gray owl are one of 16 Sierra Nevada bird species considered moderately vulnerable to climate change due to their limited dispersal capability, restricted diet, and recent population bottleneck (Siegel et al. 2014). Climate change further exacerbates drought conditions, insect outbreaks, meadow drying and wildfire. While the Sequoia and Sierra National Forests cannot directly control climate change, ecosystem plan components as mentioned above provide conditions resilient to ecosystem stressors and the interrelated effects of climate change.

Sequoia – Great Gray Owl

Information on Current Distribution of the Species in the Planning Unit

Great gray owls are thought to occur throughout the Sierra Nevada range though local distribution may be highly variable.

There is one 1986 CNDDDB record for great gray owl reported on Sequoia National Forest plan area, located a little over a mile north of Fish Creek Campground on the Kern Plateau (California Department of Fish and Wildlife 2017a). There are no NRIS database occurrence records in the plan area and there have been no detections of great gray owl recorded as part of the Sierra Nevada Avian Monitoring Information Network surveys in the plan area.

There are two CNDDDB records for the Giant Sequoia National Monument, and 18 NRIS database records with 27 individuals located in Giant Sequoia National Monument Plateau (California Department of Fish and Wildlife 2017a). Reproductive individuals have been observed in recent years on the Hume Lake Ranger District, in Giant Sequoia National Monument. The Giant Sequoia National Monument is not part of the planning area. There are three active great gray owl sites, and all are located in atypical habitat, in lower elevation areas of open pine stands, generally lacking large trees but with a large black oak component.

On the Sequoia National Forest, great gray owl habitat can be found in the montane, upper montane zone, and subalpine zones which includes a mosaic of conifer forest, meadows, and montane chaparral. On the western slopes red fir, Jeffrey pine, and lodgepole pine are the dominant forest species (Fites-Kaufman et al. 2007). This species is strongly associated with relatively large meadows (10 or more acres within 500 meters of each other). There are an estimated 556 meadows encompassing about 10,000 acres or ten percent of the total acres of the Sequoia National Forest. These meadows are unevenly distributed across the landscape.

The same as the California spotted owl, potential habitat (excluding private land) available to great gray owl is approximately 278,800 acres classified as having dense cover (60 to 100 percent closure) while 269,500 acres have moderated cover (40 to 59 percent). There are approximately 124,700 acres of forest containing California Wildlife Habitat Relationship size classes greater than 24 inches (United States Department of Agriculture 2013a).

Key Ecological Conditions in Plan Area

Mature forests, typically more moist than dry, with dense canopy cover (greater than or equal to 65 percent) and with supporting features such as large-diameter trees and snags (greater than or equal to 24 inches in diameter) for nesting sites. Meadows and early seral-stage habitats that support sufficient prey (such as pocket gophers and voles); pine and fir forests adjacent to meadows between 3,500 and 7,000 feet (Wu et al. 2016b). Two factors considered most important in determining habitat use by breeding great gray owls are availability of nest sites and availability of suitable adjacent foraging habitat such as meadows (Hayward and Verner 1994).

Sequoia Summary

There are few observations of great gray owl on the Sequoia National Forest, which is at the southern extent of the species range. There are three active great gray owl sites located on Hume Lake Ranger District, in the Giant Sequoia National Monument plan area, where nesting is suspected but unconfirmed in the Sequoia National Forest. Widespread loss of habitat from uncharacteristic stand replacing fire, and anticipated loss from climate change and reductions in groundwater run-off, are the biggest threats to this species on the Sequoia National Forest. The Sequoia National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Based upon this evaluation, the final set of ecosystem plan components and the additional species-specific plan components would provide the necessary ecological conditions to maintain a viable population of great gray owl within its range. However, due to uncertainty about the species current viability, the Sequoia being on the limit of the species' range, and potential future threats associated with climate change and wildfire, it is not within the inherent capability of the land to maintain or restore the ecological conditions to maintain a viable population of great gray owl within the Sequoia planning area.

Sierra – Great Gray Owl

Information on Current Distribution of the Species in the Sierra Planning Unit

There are 361 records of Great gray owl on the Sierra National Forest in the NRIS database. Although the majority of sightings are concentrated on the western side of the forest, running north to south, there are several located along the eastern side of the forest, with many in wilderness areas. There are 14 protected activity centers.

On the Sierra National Forest, ecological conditions supporting great gray owl can be found in the mixed conifer forest-dominated montane zone and upper montane forests. These zones include large areas of varied mixtures of ponderosa pine or Jeffrey pine, black oak, sugar pine, incense cedar, white and red firs interspersed with meadows, rocky outcrops and lodge pole pine.

On the Sierra National Forest, the number of large meadows has not changed significantly in the last decade with the exception of a few stand replacing fires that have removed potential nest stands adjacent to a large meadow or meadow complex habitat. In the previous 10 years, this has occurred in two instances on the Sierra National Forest when the Big Creek Fire removed the nest

stand adjacent to Mushroom Rock and the Snake/Cargyle2 Fire in the wilderness removed a potential nest stand next to Cargyle meadow. More recently, the 2015 Willow fire burned around Peckinpah Meadow which is considered great gray owl habitat, however recent surveys in 2012-2013 did not detect the species around that meadow. The fire may have created more foraging habitat because much of it was in the same footprint of the 2001 North Fork fire, where a great gray owl was detected in the winter foraging near a road in the fire area in January 2005 (United States Department of Agriculture 2018).

Key Ecological Conditions in Sierra Plan Area

Great gray owls are most commonly found near montane meadows surrounded by dense forest of medium to large mixed conifer and red fir tree species, and with early seral stage habitat that support abundant prey. Great gray owls are strongly associated with relatively large meadows (10 or more acres). However, more recent surveys have found multiple nests at lower elevations in mixed hardwood-conifer forests, sometimes miles from the nearest montane meadow. (Wu et al. 2015) found that 21 percent of the nest sites they visited were below elevations of 3,000 feet and over 0.4 mile from the nearest meadow. Almost one third of the nests were in oaks, rather than the typical broken-top fir snag.

Sierra Summary

The entire population is estimated at 79 pairs (Wu et al. 2016a), making it highly vulnerable to extirpation, and likely suffering from a population bottleneck (Hull et al. 2010). As a result, the risk to this subspecies from inbreeding, climate change, as well as from habitat loss due to timber harvest, grazing, and land use conversion is high (Hull et al. 2010, Hull et al. 2014, Kalinowski, Johnson, and Rich 2014). There are abundant observations of great gray owl on the Sierra National Forest, however, protected activity centers where breeding has occurred are limited to 14 protected activity centers. The biggest threats to this species on the Sierra National Forest are widespread loss of habitat from uncharacteristic stand replacing fire and anticipated loss of meadow habitat resulting from climate change and encroachment of conifers. The Sierra National Forest has a number of ecosystem-level and species-specific plan components in place to mitigate risks within its management authority, but cannot mitigate all threats for persistence. Plan desired conditions and objectives to improve meadows would protect great gray owl forage habitat. Based upon this evaluation, the ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the great gray owl in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the great gray owl in the plan area.

Kern Red-winged Blackbird – Sequoia

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the kern red-winged blackbird in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Marshy meadows and lagoons which support growths of cattails and sedges. This species needs emergent wetlands with freshwater cattail and tule marshes.

Table D-12. Key Threats, Plan Components and Expected Effects on Kern Red-winged Blackbird

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to invasive species	(Reference Crosswalk Susceptible to Invasive Species)	Ecosystem-level plan components for invasive species control (INV) and reduction would minimize the occurrence and spread of invasive species to the extent possible, and thus would reduce threats to Kern red-winged blackbird.
Loss or degradation of habitat from forest management activities	(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent) Desired Condition SQF (MA-SFW-DC) 01 Riparian woodlands are resilient and sustainable, containing mature cottonwoods, willows, and other associated riparian plants supporting native wildlife species. Desired Condition SQF (MA-SFW-DC) 02 Ecological conditions within the South Fork Wildlife Area support occupancy and breeding of federally listed at-risk species such as the southwestern willow flycatcher, least Bell's vireo, and yellow-billed cuckoo; and species of conservation concern such as Kern red-winged blackbird. Desired Condition SQF (MA-SFW-DC) 03 Recreation activities are managed to minimize effects to at-risk wildlife.	Ecosystem-level direction for water, watersheds, aquatic, and riparian areas emphasize conservation, maintenance, and restoration of aquatic and riparian ecosystem integrity. Expansion of hydropower development is unlikely on Sequoia National Forest due to being already fully developed. Management direction for South Fork Wildlife Area, where suitable red-winged blackbird habitat exists, would ensure at-risk species and their habitat would be prioritized.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, forest plan components designed to move toward desired conditions would aid in habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Stressors to watershed conditions and anything that negatively affects hydrologic flow; invasive species; fire; and climate change.

Threats under Forest Service Control

- Habitat loss or degradation due to invasive species

Tamarisk and other invasive plants moving into wetlands along the South Fork Kern River may threaten the foraging and nesting habitat of the Kern red-winged blackbird (Gallion 2008).

Threats Not Under Forest Service Control

- Loss or degradation of habitat from water use or forest management activities
- Habitat loss or degradation due to climate change or stochastic events

Any loss of wetland habitat through climate change or human water uses would likely adversely affect this subspecies. Changes in water levels at Lake Isabella may also be a threat, but regulating those levels is outside the authority of the Forest Service.

Future changes in climate (i.e. increasing temperatures) combined with a change from a snow-dominated to a rain-dominated system would impact meadows due to changes in the hydrologic regime. Total meadow area may decline and wet meadows may shift to dry meadows, especially small irregularly shaped meadows at low to mid elevations (Gross and Coppoletta 2013).

Information on Current Distribution of the Species in the Sequoia Planning Unit

The Kern red-winged blackbird has been known to inhabit east central Kern County, in Walker Basin and on the South Fork of the Kern River on the Sequoia National Forest (Mailliard 1915a, Mailliard 1915b). Within the Sequoia National Forest, breeding colonies have been recorded only in marshes around the east end of Lake Isabella adjacent the Kern River.

The breeding population in the South Fork Kern River Valley was previously estimated to number as many as 500 individuals, and a survey in the Walker Basin in 2001 found approximately 50 red-winged blackbirds believed to be this subspecies (Gallion 2008). It is unknown if the subspecies continues to persist in the Walker Basin.

Population trends for this species are currently unknown (Shuford and Gardali 2008). There are no records for Kern red-winged blackbird on the forest in the NRIS database, CNNDDB, nor from the Sierra Nevada Avian Monitoring Information Network. However, there are numerous records for red-winged blackbird in eBird. It is assumed that red-winged blackbird observed in the Kern River Valley are the Kern subspecies, however, DNA analysis is needed to confirm the subspecies.

Key Ecological Conditions in Sequoia Plan Area

The ecological requirements of the Kern red-winged blackbird are largely undescribed; however, earlier descriptions note the subspecies preference for “marshy meadows and lagoons which support growths of cattails and sedges” (Gallion 2008). Similar to tri-colored blackbird, this species needs emergent wetlands with freshwater cattail and tule marshes.

Important nesting areas are protected on the Audubon Kern River Preserve (managed by the National Audubon Society), Canebrake Ecological Reserve (managed by California Department of Fish and Wildlife), and the South Fork Wildlife Area (managed by the Sequoia National Forest). South Fork Wildlife Area is a 1,271-acre unit of the Sequoia National Forest along the western edge of the South Fork of the Kern River between the western boundary of the privately-owned Audubon Kern River Preserve and the eastern shore of the Isabella Reservoir. The area consists of Valley foothill riparian habitat dominated by cottonwood and willow trees.

Sequoia – Summary

Kern red-winged blackbird is endemic to California. This species is restricted in range to the Kern River Valley and Walker Basin in Kern County. Potential habitat for this species is limited to Lake Isabella and adjacent Kern River vicinity in the planning area. Due to the difficulty in subspecies identification it is unknown if a current viable population persists in the plan area, therefore, it is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population. However, plan components specific to the South Fork Wildlife Area would ensure this important red-winged blackbird habitat is maintained

for at-risk species persistence and would contribute to maintaining a viable population of Kern red-winged blackbird where they occur.

Mount Pinos Sooty Grouse – Sequoia

Determination: It is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Mount Pinos sooty grouse in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Relatively open coniferous and pine habitat with little understory cover. Woodlands and subalpine forests with large trees also provide habitat.

Table D-13. Key Threats, Plan Components and Expected Effects on Mount Pinos Sooty Grouse

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of habitat due to management activities such as fuels reduction treatments, livestock grazing, and timber harvest.	(Reference Crosswalk for Susceptible to Stochastic Events, Forest Dependent, Large Tree/Snag Dependent)	Ecosystem-level plan components provide direction for maintaining key habitat elements such as large trees in areas where management activities take place. Species Direction components for at-risk species, including Mount Pinos sooty grouse, support intact ecosystems that contribute to sustainable populations.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, forest plan components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.
Direct mortality from hunting	SPEC-FW-DC 04 The national forest provides high quality hunting and fishing opportunities. Habitat for nonnative fish and game species is managed in locations and ways that do not pose substantial risk to native species, while still contributing to economies of local communities.	Ecosystem-level recreational goals and guidelines would ensure disturbance to sooty grouse is minimized through public education, managing recreation activities and planning recreation facilities away from at-risk species breeding habitat. Hunting is regulated by the state and is in balance with Mount Pinos sooty grouse needs.

Key Threats to Persistence

Threats include hunting, incompatible timber harvest, fire suppression and altered fire regime, livestock grazing, land development, recreational use of habitat and climate change.

Threats Under Forest Service Control

- Habitat loss (especially loss of subalpine habitat) resulting from forest management activities such as fuels reduction treatments, livestock grazing, and timber harvest.

In addition to the forestwide plan components for Species-Specific and Terrestrial Ecosystems, (SPEC-FW-DC 01-03) specify that habitats for at-risk species support self-sustaining populations within the inherent capabilities of the plan area and that the ecosystems they depend upon would be resilient to uncharacteristic fire, climate change, and other stressors, threats are primarily addressed through ecosystem-level plan components.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or stochastic events
- Direct mortality from hunting

The Mount Pinos sooty grouse is a highly endemic (possibly relict) species with a restricted distribution in California. The subspecies is at-risk because it is very small and susceptible to inbreeding, population bottleneck, and reduced genetic diversity. Sooty grouse hunting is authorized by California Department of Fish and Wildlife and Nevada Department of Wildlife. California Department of Fish and Wildlife allow hunting on sooty grouse within Tulare, Fresno, and Madera Counties with a daily take of two birds, and a maximum possession of six birds (California Department of Fish and Wildlife 2018). The species continues to be allowed for hunting use suggesting populations of sooty grouse are at least stable. However, accurately differentiating between sooty grouse and the Mount Pinos subspecies in the field could be a potential risk factor.

A primary threat to Mount Pinos sooty grouse is loss of subalpine habitat from climate change, which further exacerbates drought conditions, insect outbreaks, meadow drying and loss, and wildfire. Since this species also makes seasonal altitudinal migrations, a warming climate could affect how far they have to migrate, which could stress the birds. While the Sequoia National Forest cannot directly control climate change, ecosystem plan components provide conditions, which should be more resilient to ecosystem stressors and the interrelated effects of climate change. Desired conditions for the subalpine and alpine zone stress open woodlands with scattered trees to small, dense groves, infrequent small fires, and subalpine woodlands that are resilient to insects, diseases, fire, wind, and climate change. These components provide the key ecological conditions for persistence. A standard for all terrestrial ecosystems further ensures large-diameter trees (greater than 30 inches in diameter) would generally be retained during management activities. A forestwide desired condition for hunting (SPEC-FW-DC 04) provides direction for high-quality hunting and fishing opportunities in locations that do not pose substantial risk to native species. However, ultimately sooty grouse hunting is authorized by California Department of Fish and Wildlife and Nevada Department of Wildlife.

Information on Current Distribution of the Species in the Planning Unit

Currently, the southernmost known breeding locations are at Sunday Peak in south-central Tulare County and Sherman Peak in southeastern Tulare County (Bland 2008). There is a 2004 CNDDDB record of six Mount Pinos Sooty Grouse on Sequoia National Forest plan area, on the northwest side of Cherry Hill. There are 5 observations labeled as *D. f. sierrae* in the NRIS database, all labeled as being on the Sequoia National Forest, with 1 observation from June 2012, 2 observations from August 2013, and 2 in July of 2016. However, these all fall within the boundary of Giant Sequoia National Monument outside the planning area. None of the 71 NRIS observations labeled as *Dendragapus fuliginosus*, sooty grouse, are reported in Sequoia National Forest plan area. Twelve of 398 observations in California that are mislabeled as *Dendragapus obscurus* (dusky grouse) occur on the Sequoia National Forest plan area.

In eBird there are numerous sightings of sooty grouse across the forest, particularly in Tulare County in the vicinities of Boone Meadow, Bald Mountain, Quaking Aspen Meadows and the Greenhorn Mountains in Kern County (eBird 2018).

Key Ecological Conditions in Plan Area

On the Sequoia National Forest, key ecological conditions for this species can be found in the Montane, Upper Montane Zone, Subalpine Zones and Alpine Zones which includes a mosaic of conifer forest, meadows, and montane chaparral. On the western slopes red fir, Jeffrey pine, and lodgepole pine are the dominant forest species (Fites-Kaufman et al. 2007). Alpine environments on the Kern Plateau may be among the most threatened.

Sequoia – Summary

Mount Pinos sooty grouse is currently found in a geographically restricted area and may be a relict population of a once more widespread species that occurred in the Southern Sierra Nevada. Therefore, it is unknown if a viable population of this subspecies currently exist in the Sequoia National Forest planning area. Due to limited distribution and a moderate population decline throughout its range, the Sequoia National Forest may provide important refugia habitat if the subspecies occurs. Taxonomic uncertainty about the species may be a potential barrier for conservation action and hunting pressure could be a factor if the subspecies is misidentified in the field. In addition, sooty grouse habitat, particularly in the subalpine forest, may be especially at-risk from climate change and interrelated effects of wildfire and drought, further increasing viability risk. Species viability of Mount Pinos sooty grouse is currently uncertain; however, proposed plan components are designed to move habitat conditions to a more desired ecological state than what currently exists. Based upon this evaluation, the final set of ecosystem plan components would provide the necessary ecological conditions to maintain a viable population of Mount Pinos sooty grouse within its range if the subspecies occurs. However, due to uncertainty about the species current viability and potential future threats associated with climate change, it is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of Mount Pinos sooty grouse within the plan area.

Northern Goshawk – Sequoia/Sierra

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the northern goshawk in the plan areas. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: Dense mature mixed conifer to lodgepole pine and deciduous forests interspersed with meadows, other openings and riparian areas that support prey populations. Large trees and snags for nesting.

Table D-14. Key Threats, Plan Components and Expected Effects on Northern Goshawk

Key Threats to Persistence	Specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
<p>Habitat loss or degradation or loss of connectivity due to management activities such as fuels reduction, vegetation treatments, and timber harvest.</p>	<p>(Reference Crosswalk for Forest Dependent; Wet/Riparian Meadow Dependent, and Large Tree and Snag Dependent)</p> <p>Desired Condition (SPEC-NG-DC) 01 Northern goshawk protected activity centers provide habitat conditions that support nesting and successful reproduction, including high canopy cover, with large trees and old forest characteristics.</p> <p>Guideline (SPEC-NG-GDL) 01 To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (February 15 to September 15 or following current regional guidance), apply a limited operating period prohibiting:</p> <ul style="list-style-type: none"> a) Road construction or extensive heavy mechanized equipment within approximately 0.25 miles of the nest site, unless northern goshawks are not nesting b) Power equipment like chainsaws or pole pruners within 300 feet of the nest site or known roost site; c) Low level helicopter flights or hovering over nests; d) Landing of helicopters within 0.25 miles of the nest; or e) Extensive hand tool activities like fireline construction for prescribed burning within 300 feet of the nest site <p>Where nest site within a protected activity center is unknown, apply the limited operating period to the protected activity center, or determine the nest stand location.</p> <p>A limited operating period may be waived for vegetation treatments of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing and specific location. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the limited operating period buffer distance may be modified.</p> <p>Breeding season limited operating period restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 5 percent of any northern goshawk protected activity centers per year on a national forest.</p>	<p>Ecosystem-level plan components for Terrestrial Ecosystems (TERR), Watersheds (WTR), Management Areas (MA), Designated Areas (DA), Fire Management (FIRE), Species Direction (SPEC), Rangeland Management (RANG), and Timber Management (TIMB) ensure goshawks would have adequate habitat for movement, dispersal, feeding, and reproduction and provide direction for maintaining key habitat elements such as large trees in areas where management activities take place and ensure wildfires are allowed to burn within the natural range of variability and contribute to ecosystem function. Desired conditions, standards, and guidelines promote ecological restoration practices that would improve forest resilience.</p> <p>Species-specific desired conditions and guidelines ensure protected activity centers and nest site conditions are provided for during vegetation and fuels treatments, high severity prescribed fire is minimized, and operating periods are limited during the breeding season. Land management activities support conditions for survival and reproduction of goshawk.</p>

Key Threats to Persistence	Specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Same as above.	<p>Exceptions: Does not apply in community buffers where they do not overlap WHMA</p> <p>Guideline (SPEC-NG-GDL) 02 Use information on occupancy and resiliency (or departure from the natural range of variation) when prioritizing protected activity centers for treatment where treatment is deemed necessary. Priority based on resilience: Priority based on occupancy:</p> <ol style="list-style-type: none"> 1. Currently unoccupied and historically occupied by territorial singles only. 2. Currently unoccupied and historically occupied by pairs. 3. Currently occupied by territorial singles. 4. Currently occupied by pairs. 5. Currently or historically reproductive. <p>Exceptions: Does not apply in community buffers Does not apply to CWPZ where there is no overlap the WHMA</p>	Same as above.
Human recreation and related disturbance.	(Reference Crosswalk for Disturb Intolerant)	Ecosystem-level desired conditions minimize disturbance from recreation related activities and human activities on sensitive resources. Guidelines constrain impacts on resources including at-risk species breeding habitat in recreation areas and ensure the needs of at-risk species, including goshawk, would be accounted for during recreation design.
Loss of roosting and nesting trees.	Guideline (SPEC-FW-GDL) 02 Known nest, roost, or den trees used by species of conservation concern, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the reasonably unavoidable removal of hazard trees and as required to meet other State or Federal regulatory requirements.	Ecosystem-level plan components ensure that forest trees and canopy cover necessary for nesting, roosting and perching would be retained during project implementation and that forest habitats are resilient to natural disturbance such as fire, insects and disease. Plan components also help to ensure that a supply of trees in the larger size classes is distributed across the forest at levels that would provide sustainable nest/roost habitat for northern goshawk cross the landscape. A species-specific guideline further reinforces the retention of known nest and roost trees used by species of conservation concern or raptors.

Key Threats to Persistence	Specific Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to climate change or stochastic events	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, forest plan components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality and can provide the foraging habitat and prey species necessary for northern goshawk.

Key Threats to Persistence

Loss of habitat due to high severity wildfire, human disturbance, and climate change pose a risk to northern goshawk persistence.

Threats under Forest Service Control

- Habitat loss or degradation or loss of connectivity due to management activities such as fuels reduction, vegetation treatments, and timber harvest.
- Human recreation and related disturbance.
- Loss of nesting and roosting trees

A study conducted by (Morrison et al. 2011) in the Lake Tahoe Basin indicated that northern goshawks are susceptible to human disturbance; human activity was twice as high within infrequently occupied territories as compared to frequently occupied territories. Many kinds of human activities have been documented to affect raptors by altering habitats, physically harming or killing eggs, harming young, killing or stressing adults, or by disrupting normal behavior (Morrison et al. 2011). A recent study on nesting northern goshawk response to logging truck noise found that while goshawks alerted (turned their head in the direction of the noise) to the noise they did not flush, and response was inversely proportional to the distance of the nest from the road (Grubb et al. 2012).

Threats under the control of Forest Service for goshawk on the Sequoia National Forest can be addressed in the form of desired conditions that emphasize sustainable recreation and that minimize human disturbance.

In addition to ecosystem-level components, several species-specific plan guidelines were added to further emphasize that the retention of key habitat components such as roosting and nesting trees for raptors are considered during project implementation. A forestwide guideline SPEC-FW-GDL 02 places additional emphasis on the protection of at-risk species habitat by ensuring appropriate design features, mitigation, and project timing considerations are incorporated into projects that may affect their habitat.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or stochastic events

It is unclear how goshawk populations would respond to climate change. One potential threat from climate change is an increasing rate of fire in higher elevation forest stands (Schwartz et al. 2015), areas that contain old-growth forest that have largely been spared from harvest. However, the effects of fire in these stands is largely dependent on fire severity, as lower fire severity can maintain or benefit goshawk habitat. Based on the Climate Change Vulnerability index, a risk assessment tool developed by NatureServe to predict a species vulnerability to climate change, northern goshawk in the Sierra Nevada was rated as Moderately Vulnerable, which is defined as “abundance and/or range extent within geographical area assessed likely to decrease by 2050” (Siegel et al. 2014). Across their range, northern goshawks display population-specific demographic relationships with local weather and regional climates. Based solely on projections of climate change, this population-specific variation is anticipated to result in population-specific responses to future climate scenarios, which could range from little effect to potentially significant effects (Long, Quinn-Davidson, and Skinner 2014, Araújo et al. 2005, BG et al. 2014, Dickson et al. 2014). The impact that climate change may have on goshawk nesting and foraging habitat and prey populations in the future is unclear. It is also unclear what if any effect climate change would have on goshawk populations, as these changes would likely very depending on population-specific conditions.

In the southern Sierra Nevada, large high-severity fires and large areas of tree cover loss from drought, insects and disease especially over the last five years has substantially reduced the amount of suitable nesting habitat within closed canopy forests. Habitat occupancy rates for northern goshawk decrease in areas of tree cover loss.

Goshawks require a minimum threshold amount of nesting habitat in mature forest condition to maintain occupancy. For example, in mixed ownership areas on the Stanislaus National Forest, occupancy monitoring suggests that at least two northern goshawk territories were abandoned immediately following harvest activities, despite the maintenance of nearby suitable nesting habitat on National Forest land. Alteration of goshawk habitat on private lands adjacent to National Forest may increase the importance of habitat condition on National Forest for continued goshawk occupancy.

Sequoia – Northern Goshawk

Information on Current Distribution of the Species in the Sequoia Planning Unit

Northern goshawks in California are well-distributed and relatively abundant in most forested areas across their core breeding range, and populations have remained stable over the past 50 years. Goshawks use a broad range of vegetation types, and habitat on national forests in California is widespread and well distributed. Goshawks possess excellent dispersal capabilities, and there are no identified barriers to dispersal

There are 357 detections of northern goshawk in the NRIS database reported as occurring on the Sequoia National Forest, which does not separate those that have occurred in the forest plan revision area from those occurring within the boundary of the Giant Sequoia National Monument. The observations occurred between 1991 to present. Of those observations, there are 27 northern goshawk protected activity centers in total, with 13 protected activity centers occurring within the forest plan revision area and the others occur within the Giant Sequoia National Monument boundary. The number of active territories is unknown.

Key Ecological Conditions in Sequoia Plan Area

Northern goshawks are found in dense mature mixed conifer to lodgepole pine and deciduous forests interspersed with meadows, other openings and riparian areas (2000-8000 feet). Goshawks are foraging generalists but have more specialized habitat requirements for breeding and prefer higher canopy closure and larger trees in the nest stand. Nest sites comprise less than 1 percent of the total goshawk home range and have relatively low vegetative structural diversity compared to forest conditions in their large home ranges, which is used for foraging, roosting, and by juvenile hawks post-fledging (Miller et al. 2013, Reynolds, Graham, and Boyce 2006, Reynolds, Wiens, and Salafsky 2006).

Sequoia – Summary

There are 13 northern goshawk protected activity centers within the plan area, the active territories are unknown. Recent population estimates for goshawk in California suggest a stable to increasing trend, but recent widespread bark beetle related tree mortality in the Sequoia National Forest plan area put this species primary ecological conditions at-risk. Climate change and potential drought related effects will apply additional pressure on the key ecological conditions that this species depends. Ecosystem-level plan components would move mature forests towards desired conditions which would provide resilient quality habitat for goshawk persistence. In addition, goshawk-specific plan components would ensure the protection of breeding hawks through avoidance and limited operating periods and retention of key ecological elements such as nest trees.

Sierra – Northern Goshawk

Information on Current Distribution of the Species in the Sierra Planning Unit

Northern goshawks in California are well-distributed and relatively abundant in most forested areas across their core breeding range, and populations have remained stable over the past 50 years. Goshawks use a broad range of vegetation types, and habitat on national Forests in California is widespread and well distributed. Goshawks possess excellent dispersal capabilities, and there are no identified barriers to dispersal

There are 591 northern goshawk records with 824 individuals in the NRIS database within the forest boundary, and 630 records with 895 individuals within the forest and a 5-mile buffer. There are 50 eBird records and 53 total individuals for the Sierra National Forest, and 125 records with 143 individuals within the forest plus a 5-mile buffer. There are 4 CNDDDB records within the forest and 15 within the forest and a 5-mile buffer. An early report of the distribution of birds in California (Grinnell and Miller 1944) include observations of northern goshawk in the Sierra Nevada, with 12 sightings on the Sierra National Forest.

Northern goshawk territories are managed on the Sierra National Forest as protected activity centers as prescribed by the Sierra Nevada Forest Plan Amendment (United States Department of Agriculture 2004b). There are 66 protected activity centers documented in NRIS in the Sierra National Forest. The number of current active territories is not known. The protected activity centers are 200 acres in size and are delineated based on all known and newly breeding territories detected on Forest. The goshawk territories, which are approximately 175 acres, are based on historical information so a current nest site maybe unknown. As areas are surveyed and nests are located the status may change from a territory to protected activity center delineation.

Key Ecological Conditions in Sierra Plan Area

Sierra National Forest vegetation types as defined by California Wildlife Habitat Relationship system indicate the following acreages rounded to the nearest hundred in the Sierra National Forest as potential habitat for goshawk: Jeffrey Pine (28,600 acres), Lodgepole Pine (32,200 acres), Red fir (141,300 acres), Sierran Mixed Conifer (269,900 acres), Subalpine Conifer (179,300 acres), Montane Riparian (3,800 acres), Wet meadow (19,400 acres), Montane-Hardwood-conifer (77,500 acres), White fir (2,600 acres) and Aspen (600 acres).

Northern goshawk protected activity centers encompass over 13,700 acres on the Sierra National Forest. The Bass Lake Ranger District has 28 protected activity centers, and High Sierra Ranger District has 38. Using the draft 2016 existing vegetation layer for the forest, there were over 353,000 acres of goshawk high quality nesting habitat on the forest, with over 154,000 acres of suitable habitat on the Bass Lake Ranger District. Before the recent tree mortality event, there was 65,590 acres of suitable goshawk high nesting habitat on the Sierra National Forest as defined by California Wildlife Habitat Relationship types. However, due to widespread tree mortality it is anticipated there is less suitable habitat currently available.

Sierra – Summary

Population estimates for northern goshawk on the Sierra National Forest suggest a stable to increasing trend due to the number of protected activity center locations, although the number of active goshawk territories on the Sierra National Forest is unknown. During the next 10-20 years, the suitable habitat acreage for goshawks is expected to remain stable or continue to increase, under current management. This habitat acreage consistency is largely the result of past and current management, which has included fire suppression management. This current management also has emphasized retaining and increasing large tree habitat. This current and projected habitat stability over the next 20 years suggests northern goshawk population could also remain relatively stable or increase during that projected 20-year time frame. Although recent population estimates for goshawk in California suggest a stable to increasing trend, recent widespread bark beetle related tree mortality in the Sierra National Forest plan area put this species primary ecological conditions at-risk. The recent large-scale drought and bark beetle related tree mortality event poses a considerable risk to availability of the large live tree component. In addition, current and future warming and drying climate trends increase vulnerability to high intensity fires and further fragmentation of old forest habitat. Ecosystem-level plan components would move mature forests towards desired conditions which would provide resilient quality habitat for goshawk persistence. In addition, goshawk-specific plan components would ensure the protection of breeding hawks through avoidance and limited operating periods and retention of key ecological elements such as nest trees. The plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Tricolored Blackbird – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the tricolored blackbird in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range

General Key Ecological Conditions: Freshwater marshes and emergent wetlands with dense tules and cattails. During migration and winter, these blackbirds inhabit open cultivated lands and pastures as well as marshes.

Table D-15. Key Threats, Plan Components and Expected Effects on Tricolored Blackbird

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss of breeding habitat to invasive species.	(Reference Susceptible to Invasive Species)	Ecosystem-level plan components to control and reduce invasive species would minimize this threat to tricolored blackbirds. Desired conditions for aquatic and riparian resources, terrestrial vegetation, and riparian conservation areas would move marsh habitat towards natural range of variation.
Loss of habitat due to human activities and changes in water levels	(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent)	The greatest threat is habitat loss and alteration by agriculture and urbanization conversion. However, this does not occur on National Forests. Plan components would not contribute additional effects and this threat would persist outside the capabilities of the Forest Service. Ecosystem-level direction for water, watersheds, aquatic, and riparian areas emphasize conservation, maintenance, and restoration of aquatic ecosystem integrity. Expansion of hydropower development is unlikely on Sequoia National Forest due to being already fully developed. Changes in water levels at Lake Isabella is outside the authority of the Forest Service.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, forest plan components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Loss and degradation of wetland breeding habitats due to agricultural and urbanization conversion, loss of habitat due to invasive species, and changes in water levels pose threats to tricolored blackbird persistence.

Threats Under Forest Service Control

- Loss of breeding habitat to invasive species.

In the limited habitat for this species on the Sequoia National Forest, loss of tules or cattails to invasive species like tamarisk is a major threat. Changes in water levels at Lake Isabella may also be a threat, but regulating those levels is outside the authority of the Forest Service. Water use from expanding population pressure and human demands, coupled with increasing temperatures

and temporal changes in precipitation and runoff events related to climate change, as well habitat loss from non-native invasive species would continue to put this species and its associated habitat components at-risk in the future.

Threats Not Under Forest Service Control

- Loss of habitat due to human activities and changes in water levels
- Habitat loss or degradation due to climate change or stochastic events

Loss and degradation of wetland breeding habitats caused by human activities represent the greatest threat to populations of tricolored blackbird (Meese, Beedy, and W.J. Hamilton 2014). Draining and conversion of wetlands for agriculture; conversion of upland habitat (especially Himalayan blackberry thickets within open pastures) used by some nesting colonies; application of insecticides, nest destruction and associated egg and nestling mortality during agricultural crop harvests; and collateral killing along with the red-winged blackbirds are all threats that occur on private lands in California, but do not affect birds on National Forest lands (Meese, Beedy, and W.J. Hamilton 2014).

Climate change, however, is a threat to the species across all land ownerships. There is a higher probability that California will experience warmer and dryer conditions in the future (Diffenbaugh, Swain, and Touma 2015). The impact that climate change may have on marsh habitats in the future is unclear. It is also unclear what if any effect climate change would have on tricolored blackbird populations, as many colonies now use upland habitats for nesting.

Changes in water levels at Lake Isabella may also be a threat, but regulating those levels is outside the authority of the Forest Service.

Information on Current Distribution of the Species in the Sequoia Planning Unit

Within the Sequoia National Forest, breeding colonies have been recorded only in marshes around Lake Isabella and the Kern River.

In eBird, there are 77 sighting of 1186 tricolored blackbirds within the forest administrative boundary, with nearly all occurring in the plan area, in the Lake Isabella area and east of Lake Isabella along the Kern River and Kern River Preserve and State route 178 (eBird 2018). CNNDDB data includes three records of tricolored blackbird in the vicinity of Lake Isabella on the Kern River Ranger District, with possible nesting attempts as recent as 2015. There are no records in the NRIS database.

Statewide, the population of tricolored blackbirds declined 35 percent, from approximately 395,000 to 258,000 birds between 2008 and 2011 (Kyle and Kelsey 2011). From 2011 to 2014 the number of tricolored blackbirds dropped another 44 percent, from 258,000 to 145,000 birds (Meese, Beedy, and W.J. Hamilton 2014). The eBird sightings in the plan area include many from 2014 through 2017 (eBird 2018).

Key Ecological Conditions in Sequoia Plan Area

The species' basic requirements for selecting breeding sites are open accessible water; a protected nesting substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony (Beedy and Hamilton 1999). Historically they used freshwater marshes and emergent wetlands with dense vegetation including aquatic sedges (tules) and cattails for nesting.

Sequoia – Summary

This species occurs on the Sequoia National Forest in extremely low numbers and statewide populations are in decline. Suitable habitat on the Sequoia National Forest is limited to the shores of Lake Isabella and surrounding vicinity. Water use from expanding population pressure and human demands, coupled with increasing temperatures and temporal changes in precipitation and runoff events related to climate change, as well habitat loss from non-native invasive species would continue to put this species and its associated habitat components at-risk in the future. Plan components to address watershed protection and climate change effects would aid in the persistence of the species within the plan area but would not entirely alleviate threats to tricolored blackbird throughout its range. Six hydroelectric projects are located on the forest, four on the Kern River, and two on the Tule River. These hydroelectric projects are run off of the rivers, but do influence the flows and timing of flows of the rivers. The Forest Service does not have the capacity to eliminate key threats such as wetland conversion, water use regulation, or climate change which pose the greatest threats to persistence. Therefore, it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the tricolored blackbird in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Willow Flycatcher – Sierra/Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the willow flycatcher in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Dense riparian willow or other shrub thickets within large wet meadows. Meadows with standing or running water are needed for breeding.

Key Threats to Persistence

Nest predation and parasitism, breeding habitat degradation and loss from management practices such as grazing, road construction, and water diversion; climate change.

Threats Under Forest Service Control

- Loss and degradation of riparian and wet meadow habitat from management practices such as livestock grazing.

Loss and degradation of riparian and meadow habitat is considered the most significant threat to the persistence of willow flycatchers in the plan area. Degradation of habitat from management practices including livestock grazing (historic and present), road construction, and water diversion have resulted in a reduction of willow habitat, as well as compaction and drying of meadows. Water diversions that result in a reduction of riparian vegetation, particularly willows, from either reduced water availability or inundation of riparian areas effectively degrade habitat quality for willow flycatchers.

Table D-16. Key Threats, Plan Components and Expected Effects on Willow Flycatcher

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Loss and degradation of riparian and wet meadow habitat from management practices such as livestock grazing.	<p>(Reference Crosswalk)</p> <p>Desired Condition SQF (MA-SFW-DC) 02 Ecological conditions within the South Fork Wildlife Area support occupancy and breeding of federally-listed at-risk species such as the southwestern willow flycatcher, least Bell's vireo, and yellow-billed cuckoo; and species of conservation concern such Kern red-winged blackbird.</p> <p>Standard (SPEC-WD-STD) 01 In willow flycatcher occupied sites receiving late season grazing, if habitat conditions are not supporting the willow flycatcher or are trending downward, modify or suspend grazing at those sites.</p> <p>Standard (SPEC-WD-STD) 02 During allotment management planning (AMP) or when authorizing livestock or pack stock use, determine occupancy of willow flycatcher in affected meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component capable of providing willow flycatcher habitat, utilizing established protocols.</p> <p>Standard (SPEC-WD-STD) 03 In meadows with occupied willow flycatcher sites, allow only late-season grazing (after August 15) in the entire meadow. This standard may be waived if an interdisciplinary team together with the affected grazing permittee has developed and implemented a site-specific meadow management strategy. The strategy must focus on protecting the nest site and associated habitat during the breeding season and the long-term sustainability of suitable habitat at breeding sites. It may use a mix of management tools, including grazing systems, structural improvements, and other exclusion by management techniques to protect willow flycatcher habitat.</p> <p>Standard (RANG-FW-STD) 01 Manage livestock grazing to attain desired conditions in blue oak-interior live oak woodlands, annual grasslands, aspen, special habitats, great gray owl protected activity areas, occupied willow flycatcher habitat, and riparian conservation areas. Where livestock grazing is found to prevent or retard attainment of desired conditions, modify grazing practices (such as number of livestock, timing, scheduled rest, and range structures). If adjusting practices is not effective, remove livestock from the area using appropriate administrative authorities and procedures.</p>	<p>Management for aquatic and riparian ecosystems ensures these habitats are fully functioning or trending toward fully functioning and resilient, and that infrastructure has minimal adverse effects to riparian and aquatic resources.</p> <p>Species-specific standards and rangeland forestwide standard 01 would minimize impacts from grazing in meadow and riparian areas so it is compatible with willow flycatcher habitat needs such as species composition and intact hydrologic function and water flow. Habitat restoration would further reduce this threat by increasing available habitat for willow flycatchers.</p> <p>On Sequoia National Forest desired condition for the South Fork Wildlife Area would support occupancy and breeding for southwestern willow flycatcher and provide persistence for all willow flycatchers.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Nest predation/ parasitism	N/A	There are no forest components to limit this threat, but educational activities may help mitigate this issue by increasing public awareness
Loss and degradation of riparian and wet meadow habitat from human water use, drought, and climate change	(Reference Crosswalk for Riparian/Water Dependent and Wet/Riparian Meadow Dependent)	Ecosystem-level desired conditions and goals provide for ecological integrity of aquatic and riparian resource so that they are resilient to climate change and other stressors. Standards ensure that exempt hydroelectric facilities would not interfere with adequate in-stream flow or favorable ecological conditions for local riparian- and aquatic-dependent species such as willow flycatcher.

Loss of meadow and riparian habitat is a primary risk factor and a number of ecosystem-level plan components mitigate this threat, within Forest Service authority. This is achieved primarily through desired conditions, standards, guidelines and objectives for watersheds and riparian conservation areas as mentioned above.

There are currently no occupied willow flycatcher sites that overlap with livestock grazing on the forests, and efforts to improve riparian areas, primarily springs and relatively small portions of streams within annual grass systems are the result of positive mitigations resulting from ongoing allotment analyses on the forest. As a result of analyzing range condition through the NEPA process, eight allotments required riparian area fence protection totaling 24 specific riparian areas. All of the sites required fencing to reduce livestock impacts and move the area to an acceptable standard. Sixteen of the sites have been constructed and the remaining seven are pending (NEPA completed in September 2011 for 8 sites, one of which was completed in 2012). Four additional riparian exclosures were constructed on Greenhorn Mountain to rectify resource concerns. All of the sites fenced thus far have shown improvement and upward trends in the riparian component of the sites.

Current livestock numbers on the Sequoia National Forest are approximately 60 percent of those permitted in the 1960s. Conditions in meadows and riparian areas have generally been improving and most measures of rangeland condition indicate an upward trend. Livestock grazing is likely to be sustained within the planning area over the next 20 years. The amount of livestock grazing may decline to some degree due to reduced forage capacity (declining condition of upland browse, lack of fire, and timber canopy closure) and tighter administrative constraints for protection and enhancement of threatened, endangered, sensitive species habitat and other resource concerns such as water quality.

Threats Not Under Forest Service Control

- Nest predation/ parasitism
- Loss and degradation of riparian and wet meadow habitat from human water use, drought and climate change

Outside the national forest, water diversions have impacted willow flycatcher habitat. As stated in (Green, Bombay, and Morrison 2003), riparian vegetation in the Owens Valley located

downstream of the intake to the Los Angeles aqueduct has dramatically changed to a drier condition due to the lack of water, and no longer provides habitat for nesting willow flycatchers. Increased water demands coupled with more frequent drought events and drying conditions, will continue to act as negative stressors on flycatcher habitat. Water resource management activities, including maintaining perennial water quality, quantity, and timing of flows play a critical role in overall ecological function and sustainability and most of these activities are regulated outside the boundary of the national forest.

Nest predation is common and is considered a likely factor most affecting population viability in the Sierra Nevada (Bombay 1999, Cain, Morrison, and Bombay 2003). Predators include milk snakes, common king snakes, red tailed hawks, weasels, chipmunks, and squirrels. Standing water around nests is considered a deterrent to mammalian predators and nests farther from trees exhibit higher nest success (Cain, Morrison, and Bombay 2003). Brood parasitism from brown-headed cowbirds is also identified as a threat to willow flycatchers. Brown-headed cow birds have a commensal relationship with domestic livestock. Rates of parasitism are variable and may affect flycatcher productivity at the local level (Green, Bombay, and Morrison 2003). Placement of bird feeders in residential areas off the national forest is known to attract brown-headed cowbirds, which in turn leads to nest parasitism of willow flycatchers. Several goals focused on educational outreach and community stewardship may help mitigate this issue by increasing public awareness through the partnerships, volunteers, interpretation and stewardship programs and also by working with State and Federal wildlife agencies to reduce impacts of invasive species that are adversely affecting the persistence of native species populations in Riparian Conservation Areas.

Drought and climate change are known to influence long-term patterns in meadow condition such as reductions in willow habitat; however, the recent declines in willow flycatcher population numbers and degradation of suitable breeding habitat have likely been accelerated due to anthropogenic factors (Green, Bombay, and Morrison 2003).

Sequoia – Willow Flycatcher

Information on Current Distribution of the Species in the Sequoia Planning Unit

There are 64 records of 82 individual willow flycatchers in eBird for the Sequoia National Forest, but this also includes those on the Giant Sequoia National Monument (eBird 2018). There are recent willow flycatcher reports scattered throughout the forest: in Tulare County there are records from the Greenhorn Mountains and meadows on the Kern Plateau; and in Kern County there are records south of Kern Peak at Kern Flat and Lloyd Meadow, and in the vicinity of Lake Isabella and along the Kern River (Kern River Preserve, South Fork Wildlife Area). The sightings in Lake Isabella area are presumed to be the endangered *extimus* subspecies, and willow flycatchers detected outside of this area and in the montane forests may be *brewsteri*, but identity has not been confirmed. A third subspecies, *E. t. adastus*, was known on the east side of Sierra Nevada and may or may not have occurred on the Sequoia National Forest.

There were six sites considered “occupied” on Sequoia National Forest under the 2004 Sierra Nevada Forest Plan Amendment (United States Department of Agriculture 2004b). Five of those sites are within Giant Sequoia National Monument and one is in the Sequoia National Forest plan area. Although willow flycatcher was detected during monitoring in the Monument in 2009, the last detection during monitoring in the plan area was in 2001, despite repeated surveys. Flycatcher surveys are conducted using standardized protocol (Bombay et al. 2003). The willow

flycatcher site in the plan area, Troy Meadow, has not been occupied since 1997. Follow-up visits for detections at other sites listed as occupied in the 2004 have been negative, with no evidence of birds persisting through the breeding season.

To summarize, there have been no detections in the plan area since 2001. The status of willow flycatcher subspecies on the Sequoia National Forest is not well understood because they are difficult to differentiate from the federally listed southwestern willow flycatcher species in the field.

Key Ecological Conditions in Sequoia Plan Area

Willow flycatcher is found in western Sierra Nevada's willow dominated riparian areas, including moist meadows with perennial streams and smaller spring-fed or boggy areas (2,000 to 8,000 feet). Potential habitat (excluding private land) acreage rounded to the nearest hundred, as defined by the California Wildlife Habitat Relationships, includes wet meadow (4,400 acres), montane riparian (6,000 acres), and valley foothill riparian (500 acres). This provides a total of 10,900 acres available to willow flycatcher on the Sequoia National Forest.

Sequoia Summary

Water use from expanding population pressure and human demands, coupled with increasing temperatures and temporal changes in precipitation and runoff events related to climate change, along with small declining populations that are subject to nest parasitism by brown-headed cowbirds will continue to put this species and its associated habitat components at-risk on the Sequoia National Forest. Riparian habitat is currently departed from historic conditions due in large part to growing population demands for water that result in stream diversions and impoundments. The Forest Service has little control over water management outside national forest boundaries. For this reason, it would be difficult for managers to fully restore riparian habitat to reference conditions. Proposed ecosystem-level plan components are designed to move habitat conditions to a more desired ecological state than what currently exists. This would move willow riparian habitats to a more resilient condition and provide for the ecological needs of willow flycatcher. Furthermore, specific plan components to address management of the South Fork Wildlife Area, an important area for willow flycatchers, would guide forest management activities to protect and improve willow flycatcher habitat.

There is no current documentation of breeding of willow flycatchers in the plan area and key risk factors including climate change, ground water pumping and water diversions not within Forest Service management authority make it beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the willow flycatcher. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Sierra – Willow Flycatcher

Information on Current Distribution of the Species in the Sierra Planning Unit

On the Sierra National Forest, there are 117 records of 421 individuals of willow flycatcher in the NRIS database. The majority of those records are from the 1980s and 4 records are within the last 15 years. There are 20 records of 37 individuals in eBird and 8 records in CNDDDB (eBird 2018).

There were 9 known occupied flycatcher sites reported on the Forest in 2004 (United States Department of Agriculture 2004b). However, the Sierra National Forest has no currently occupied sites based on consistent survey and reporting for historically occupied sites. Two sites, Markwood Meadow and Long Meadow, were occupied on two occasions, each between 2000 and 2008, but these two sites have not been occupied since 2008. Follow-up visits for detections at other sites listed as occupied in the 2004 have been negative, with no evidence of birds persisting through the breeding season.

Key Ecological Conditions in Sierra Plan Area

Potentially available habitat (excluding private land) as classified by the California Wildlife Habitat Relationship (acreages rounded to nearest hundred) includes the following vegetation types: 3,800 acres montane riparian, 300 acres valley foothill riparian, and 19,400 acres wet meadow.

Sierra – Summary

In the past 15 years, there have been few detections for willow flycatcher on the Sierra National Forest and there are currently no occupied sites. Although there have been no recent documented willow flycatcher breeding in the plan there have been numerous sightings of individuals during spring and summer months (eBird 2018). Flycatcher surveys are limited and it is possible that willow flycatcher breeding occurs in isolated patches of riparian habitat in the plan area. There is approximately 23,400 acres of potential willow flycatcher habitat in the Sierra National Forest. Water quality and quantity are at present well within the natural range of variability in most areas of the forest. However, climate change is a stressor which may limit water quality and quantity in the future. Watersheds are overall in good condition. A few are impaired due to water withdrawals or impoundments. Water use from expanding population pressure and human demands, coupled with increasing temperatures and temporal changes in precipitation and runoff events related to climate change would continue to put this species and its associated habitat at risk in the future.

Based upon this evaluation, the final set of ecosystem-level plan components and the additional species-specific plan components would provide the necessary ecological conditions to maintain a viable population of willow flycatcher within the plan area, if one exists, over the duration of the forest plan. However, there is no current documentation of breeding of willow flycatchers in the plan area and key risk factors including climate change, ground water pumping and water diversions not within Forest Service management authority make it beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the willow flycatcher.

Amphibians

Fairview Slender Salamander – Sequoia

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the Fairview slender salamander in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Table D-17. Key Threats, Plan Components, and Expected Effects on Fairview Slender Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Degradation or loss of habitat and microsite conditions due to forest management activities	<p>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition (SPEC-FW-DC) 03 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements of special habitats (like special features such as carbonate rock outcrops) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions.</p> <p>Standard (WTR-RCA-STD) 09 Use screening devices for water drafting pumps. (Fire suppression activities are exempt during initial attack.) Use pumps with low entry velocity to minimize removal of aquatic species from aquatic habitats, including juvenile fish, amphibian egg masses, and tadpoles.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians including the Fairview slender salamander.</p> <p>Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats.</p>
Disease/natural predators	<p>Desired Condition (SPEC-FW-DC) 02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impact from threats (e.g. disease and other site-specific threats). Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for species of conservation concern.</p>	<p>Species-specific desired conditions would minimize impacts from threats such as increased predator populations and improve conditions for at-risk salamanders.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to climate change or other stochastic events.	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to these effects.

General Key Ecological Conditions: Oak woodlands, chaparral habitat, riparian corridors, forest litter, rocks, down logs and woody debris. This species is known to inhabit drier habitats than most slender salamanders, such as talus slopes and uplifted ridges of metamorphic rocks paralleling the Kern River (Jockusch and Wake 2002, Jockusch et al. 2012). This species is active in moist fall, winter and spring months.

Key Threats to Persistence

Degradation or loss of habitat and microsite conditions due to ground disturbance, fire suppression equipment, and road maintenance; disease and natural predators. Effects from climate change.

Threats under Forest Service Control

- Degradation or loss of habitat and microsite conditions due to forest management activities

For terrestrial salamander species, ground disturbance from a variety of sources could directly impact individuals on the surface cover substrate, such as rocks, logs or forest vegetation litter. Fire suppression, vegetation management, and other activities using heavy equipment could degrade slender salamander habitat by disturbing microsite conditions such as woody debris and forest litter. Additionally, the close proximity of some populations to Mountain Highway 99 (Kernville-Johnsondale) means that roadwork has the potential to affect their habitat.

Forest-wide **Guideline (SPEC-FW-GDL) 01** to minimize impacts of projects on at-risk species habitat along with desired conditions that maintain microclimate and smaller scale elements of special habitats would alleviate this threat by ensuring that habitat exists to the best of the Forest's ability.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change, widespread tree mortality, or other stochastic events.
- Disease and natural predators

This species is vulnerable to stochastic events such as fire. Large scale fire can directly eliminate individuals and localized populations if the severity is high enough to remove forest litter and woody debris. Habitat may be maintained or improved with the restoration of periodic low severity fire.

Climate change effects (i.e., warmer temperatures and longer drought) would intensify trends in fire, insect and disease outbreaks, and drought-related tree mortality. Warmer temperatures and drought would dry the ground and wood and other cover for salamanders. This would restrict their movements further. Invasive plant species are also expected to increase, especially in the surrounding foothills. Once an invasive species dominates a site, fire patterns are expected to change and become more frequent. Warmer temperatures would also dry the ground, wood, litter, and other cover for salamanders, further restricting the movement of this species and the time that they are active each year.

Additional threats to this species include disease and natural predators. Chytridiomycosis (*Batrachochytrium dendrobatidis*) has been documented for the California slender salamander (*Batrachoseps attenuatus*), however, the actual impacts of chytridiomycosis on the Fairview slender salamander is unknown. Natural predators of this species likely include: spotted and striped skunks, ringtails, raccoons, gray foxes, ring-necked snakes, and various skinks, moles and shrews (Krueger 2016).

Information on Current Distribution of the Species in the Planning Unit

There are 13 sites are documented for the Sequoia National Forest in CNNDDB. All sites are located in the plan area, occurring on the eastern side of the Greenhorn Mountains, from just south of Sherman Peak to Isabella Lake along the Kern Canyon corridor. There are no records in the NRIS database for the Fairview slender salamander on the Sequoia National Forest.

Key Ecological Conditions in Plan Area

The Fairview slender salamander is endemic to California and is found only in the Upper Kern River Canyon along the west side of Lake Isabella, on the east and west sides of the river, from Wofford Heights north to 1 kilometer north of where South Falls Creek flows into the Kern River (Jockusch and Wake 2002, Jockusch et al. 2012).

Sequoia – Summary

The Fairview slender salamander is found only in the Upper Kern River Canyon along the west side of Lake Isabella in oak woodlands, chaparral habitat, riparian corridors, forest litter, rocks, down logs and woody debris. This species is considered relatively common and not known to be declining. The biggest threats to this species on the Sequoia National Forest are degradation or loss of habitat from ground disturbing activities and fire. These factors combined with direct mortality due to predation, disease, and increased stochastic fire events of high intensity, puts slender salamanders at significant risk. Forest-plan components to minimize impacts of projects on at-risk species habitat and maintain microclimate and smaller scale elements of special habitats would ensure that habitat for the species exists to the best of the Forest's ability. Although the effects of natural disturbances cannot be controlled, forest management activities such as vegetation and fire management would help maintain and protect habitat. Ecosystem-level components should maintain or restore ecological conditions to contribute to maintaining a viable population in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Foothill Yellow-legged Frog – Sequoia/Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the foothill yellow-legged frog in the plan area. Nonetheless, the plan components

should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Shaded rocky streams within a variety of habitats, including blue oak woodland, chaparral/live oak, black oak/ponderosa pine, montane and wet meadows. Dependent on water for all life stages.

Key Threats to Persistence

Altered flow regimes in streams and rivers for hydroelectric power, water storage and water delivery; degradation of riparian habitat; disease; invasive species; pesticides; drought and climate change.

Table D-18. Key Threats, Plan Components and Expected Effects on Foothill Yellow-legged Frog

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to forest management activities.	<p>(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Open Water Dependent)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining populations of aquatic species such as the yellow-legged frog.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Competition and predation from invasive species	(Reference Crosswalk for Susceptible to Invasive Species)	Ecosystem-level plan components would minimize the occurrence and spread of invasive species, and thus would reduce threats to yellow-legged frogs.
Inadvertent poisoning from pesticides	Standard (SPEC-FW-STD) 01 Where pesticide applications are proposed within 500 feet of known occupied sites for Yosemite toad, Sierra Nevada yellow-legged frog, mountain yellow-legged frog, and for other aquatic and riparian at-risk species, design applications to avoid adverse effects to individuals and their habitats.	Species-specific plan components would regulate pesticide application near yellow-legged frog occupied sites and alleviate this threat.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.
Habitat degradation due to alterations to the natural flow regime in rivers and streams from hydroelectric dams	(Reference Crosswalk for Open Water Dependent, Riparian/Water Dependent)	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they are high quality and provide adequate habitat for yellow-legged frog. Specific guidelines for at-risk species promotes design features to protect all species at-risk during project implementation. Control of impacts from dams and hydroelectric use is beyond Forest control, but plan components to maintain adequate timing and quantity of water flows and sustain water quality would help reduce threats to foothill yellow-legged frogs. Expansion of hydropower development is unlikely on Sequoia National Forest due to being already fully developed.

Threats under Forest Service Control

- Habitat degradation due to alterations to the natural flow regime in rivers and streams from forest-managed activities
- Competition and predation from invasive species
- Inadvertent poisoning from pesticides

Changes in stream temperature or morphology can cause high mortality during the species' egg and larval life stages. Research has repeatedly shown that foothill yellow-legged frogs are adversely affected by seasonal pulse flows, which create stressful or fatal velocity conditions for early life stages. The main causes of mortality in eggs are hydrologic in nature. Eggs are usually

killed by either desiccation or scour (Lind et al. 2003, Davidson and Knapp 2007). Tadpole mortality can also occur as a result of irregular stream flows.

Fish stocking in rivers, streams, reservoirs, and previously fishless lakes have reduced native fish and amphibians, such as yellow-legged frogs. On the Sequoia, many species of warm water non-native fishes have been introduced into lower elevations on the Kern, Tule and Kings Rivers associated with reservoirs. Non-native and hatchery trout were introduced into formerly fishless streams on the Tule, White and Deer watersheds and above natural barriers on the Kings and Kern Rivers. These non-native fish outcompete and feed on the native species in these lakes, including insects, frogs, and fish. Non-native bullfrogs have become widely dispersed across the forest at elevations less than 5,500 feet and pose a competition and predation risk to yellow-legged frogs. Other aquatic invasive species, such as quagga mussel and New Zealand mudsnails, have spread throughout California on boats, fishing equipment, and other water sports gear (Moyle et al. 2015). However, this invasive has not been identified on the forests yet.

Threats Not Under Forest Service Control

- Habitat degradation due to alterations to the natural flow regime in rivers and streams from hydroelectric dams
- Habitat loss or degradation due to climate change or stochastic events

Stream morphology, flows, and temperatures may be affected by hydroelectric use on the Sequoia and Sierra National Forests. Dams and diversions also contribute to aquatic habitat alteration by blocking aquatic species movement or migration, and contribute to species isolation. Water quantity and quality may be affected in the future as hydroelectric use continues and increases. Population growth has led to increased competition for water among various uses which can negatively impact foothill yellow-legged frogs. Dams and diversions on and around both Forests have impacts on watershed conditions within the Forests. While controlling impacts from dams and hydroelectric use is beyond Forest control, ecosystem-level plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.

The current distribution of foothill yellow-legged frog is strongly correlated with climate variables, which suggests that this species would be sensitive to climate changes that affect stream hydrology (Thomson, Wright, and Shaffer 2016). In the Sierra Nevada, snowpack losses of 50-90 percent are predicted by the turn of the twenty-first century resulting in earlier runoff and reduced spring and summer stream flows (Dettinger et al. 2004, Maurer et al. 2007). How frogs would respond to these changes is unknown, but reduced water availability in the Sierra Nevada would likely lead to more conflict with human use of water and affect how regulated reaches are managed, likely to the detriment of this species (Thomson, Wright, and Shaffer 2016). Drought can impact foothill yellow-legged frogs by causing drying of normally perennial streams resulting in the stranding of tadpoles and recently metamorphosed frogs.

Parasites pose an additional threat to foothill yellow-legged frogs. The parasite, *Ribeiroia* has been shown to cause severe limb deformities in other frog species and has been found in the vicinity of foothill yellow-legged frogs. Another parasite, Anchor Worm (*Lernaea cyprinacea*), is non-native and typically infects fish but can infect larval foothill yellow-legged frogs which can cause deformities or mortality (Kupferberg et al. 2009). In addition, the most significant parasite that impacts this species is *Batrachochytrium dendrobatidis* which causes amphibian chytridiomycosis.

The proliferation of trespass cannabis grow sites can damage aquatic habitat quality by diverting water and adding detrimental toxicants to headwater (Bauer et al. 2015). Kerby and Sih (2015) found that a non-lethal concentration of the pesticide carbaryl interacts with other stressors, such as the presence of non-native crayfish, to reduce survival of foothill yellow-legged frog tadpoles by 50 percent. Pesticides can impact these frogs in both original and derived forms. Chloroxon (the oxon derivative of chlorpyrifos) killed all tadpoles exposed to it and was at least 100 times more lethal than the parent chemical (Fellers et al. 2004). Air-borne pesticides are implicated as the most significant threat to this species, especially for Sierra Nevada populations which are directly impacted by pesticide drift from the central valley (Fellers et al. 2004).

Sequoia – Yellow-legged Frog

Information on Current Distribution of the Species in the Sequoia Planning Unit

Although the species was found to be absent from many historic locations on the forest during surveys occurring from 1990 through 2000, positive detections were made after 2000. The two most recently occupied localities on the Sequoia National Forest consist of unnamed tributaries of the North Fork Kern River, given the names Ash and Jywood Creeks (Hayes et al. 2016). However, foothill yellow-legged frogs may have been extirpated from Ash Creek (Lind et al. 2003). In Jywood Creek, at least two adult foothill yellow-legged frogs were observed during every survey between 1998 and September 2002 (Lind et al. 2003). The known foothill yellow-legged frogs on the Sequoia National Forest appear to be very few and limited in distribution, and may be near extirpation in the region.

Key Ecological Conditions in the Sequoia Planning Unit

Key ecological conditions for the foothill yellow-legged frog are water quality and quantity. This species is found in partially shaded rocky streams in a variety of habitats, including blue oak woodland, chaparral/live oak, black oak/ponderosa pine, montane and wet meadows and appear to be highly dependent on free water for all life stages (Morey 2007).

Surface water resources for the Sequoia National Forest are predominately in the Kern and Tule Rivers. Flows from Sequoia National Forest streams have been highly variable over the span of several decades. Natural variation in flow is due to the long- and short-term climate cycles that influence precipitation. Timing of peak flows from snow melt is earlier than it was ten years ago, and reflects warmer than normal spring temperatures (Stewart 2009, Hunsaker, Long, and Herbst 2013).

Major dams and their reservoirs are found just off the forest on the Kings, Tule and Kern Rivers and block the movement of warm water native fishes. Smaller dams and diversions that are run off of the facilities on the Kern and Tule Rivers block the movement of warm and cold-water species, and have encouraged conditions for bass or brown trout, both non-natives (United States Department of the Interior 2013b).

Sequoia – Summary

The biggest threats to this species on the Sequoia National Forest are the loss of water quality and quantity due to hydroelectric use. These factors combined with the loss of genetic diversity, habitat loss, pesticide use, non-native fish and aquatic species competition, and direct mortality due to predation or disease, puts the foothill yellow-legged frog at significant risk. There is substantial concern about this species ability to persist in the planning area. In the Sequoia National Forest this species distribution is limited and may be close to extirpation. However,

ecosystem-level plan components to improve watersheds and other aquatic habitats would provide for species persistence to the extent of Forest Service management authority. The Forest Service cannot eliminate all threats, including human water use, disease, and environmental toxins, but nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Sierra – Yellow-legged Frog

Information on Current Distribution of the Species in the Sierra Planning Unit

The foothill yellow-legged frog was historically located in six locations on the Sierra National Forest. The most recent surveys found the only drainage with confirmed yellow-legged frogs is Jose Creek, a tributary of the San Joaquin River that is isolated by the presence of upper Redinger Lake at its mouth (Lind et al. 2003). Surveys of Jose Creek have been conducted with varying degrees of intensity since the confirmed population there in 1994. Surveys between 1994 and 2003 detected some adults, juveniles or tadpoles every year; the maximum number of adults found was 19 in 1994, and numbers of adults did not exceed seven after 1994. Surveys of historical sites downstream of Sierra National Forest since 1995 have failed to detect foothill yellow-legged frogs (Hayes et al. 2016). Foothill yellow-legged frogs on the Sierra National Forest appear to be rare and limited in distribution, and may be near extirpation in the region.

Key Ecological Conditions in the Sierra Planning Unit

Key ecological conditions for the foothill yellow-legged frog are water quality and quantity. This species is found in partially shaded rocky streams in a variety of habitats including: valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral and wet meadows and appear to be highly dependent on flowing water for all life stages (Morey 2007). This is a stream-breeding frog, often associated with larger streams with coarse substrates. However, they also have been found in smaller tributaries, and in areas with finer substrates or bedrock.

Stream morphology and temperatures may be affected by hydroelectric use on the Sierra National Forest. There are 50 dams and diversions on the Sierra National Forest, which affect flow over approximately 220 miles of streams. Dams and diversions may contribute to aquatic habitat alteration by blocking aquatic species movement or migration, and may contribute to species isolation. There are approximately 155 stream miles on the forest which are subject to flow regulation under licenses from the Federal Energy Regulatory Commission. Streams under Federal Energy Regulatory Commission licenses have conditions for providing minimum in-stream flows. Water temperatures downstream of dams are affected by volume of flow and temperature of the upstream reservoir. Warming temperatures can further limit distributions of native fishes and other aquatic dependent species, like the foothill yellow-legged frog (United States Department of the Interior 2013b).

Water quantity and quality, including stream morphology and temperatures, may be affected in the future as hydroelectric use continues and increases. The Forest completed a Settlement Agreement with Southern California Edison in 2008 regarding future operations of several of its hydroelectric facilities. Among the conditions on the new licenses would be increases in minimum instream flow, along with channel and riparian maintenance flows. Increases in flow would support the amount of habitat available, and possibly reduce water temperatures in some stream segments, providing additional cold water habitat. This would affect approximately 90

miles of streams when the new Federal Energy Regulatory Commission license is issued (United States Department of the Interior 2013b).

Sierra – Summary

Foothill yellow-legged frogs on the Sierra National Forest appear to be rare and limited in distribution, and may be near extirpation in the region. The biggest threats to this species on the Sierra National Forest are the loss of water quality and quantity due to hydroelectric use, along with illegal marijuana grows, non-native fish and disease. These factors combined with the loss of genetic diversity due to habitat loss, pesticide use, and invasive species competition for habitat and direct mortality puts the foothill yellow-legged frog at significant risk. Climate change is expected to bring warmer temperatures, along with more variability in precipitation and less snow to slowly fill the streams over the season. Given that a main threat—loss of water quality and quantity due to hydroelectric use—is outside of Forest control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of foothill yellow-legged frog within the plan area. Nonetheless, ecosystem-level components should help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Gregarious Slender Salamander – Sierra

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the gregarious slender salamander in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: In general, slender salamanders do not need standing or flowing water for breeding or any other part of the life cycle. During wet season conditions, slender salamanders can be near the surface and as conditions dry out, this species will retreat to microsite areas where moisture can be found. Microhabitat may include surface cover such as down wood (in or under logs, under bark or boards), rocks, and litter. In general, *Batrachoseps* salamanders demonstrate high site fidelity and rarely move more than 5-10 meters over their lifetime (Cunningham 1960, Olson and Kluber 2014).

Key Threats to Persistence

Ground disturbance to microsite conditions, degradation or loss of habitat due to ground disturbance or fire, disease, and natural predators.

Threats under Forest Service Control

- Degradation or loss of habitat and microsite conditions due to forest management activities

For terrestrial salamander species, ground disturbance from a variety of sources could directly impact individuals on the surface cover substrate, such as rocks, logs or forest vegetation litter. Fire suppression, vegetation management, and other activities using heavy equipment could degrade slender salamander habitat by disturbing microsite conditions such as woody debris and forest litter.

Forest-wide guidelines to minimize impacts of projects on at-risk species habitat along with desired conditions that maintain microclimate and smaller scale elements of special habitats would alleviate this threat by ensuring that habitat exists to the best of the Forest's ability.

Table D-19. Key Threats, Plan Components and Expected Effects on Gregarious Slender Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Degradation or loss of habitat and microsite conditions due to forest management activities	<p>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians including gregarious slender salamander. Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats when possible.</p>
Disease/natural predators	<p>Desired Condition (SPEC-FW-DC) 02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impact from threats (e.g. disease and other site-specific threats). Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for species of conservation concern.</p>	<p>Species-specific desired conditions would minimize impacts from threats such as increased predator populations and improve conditions for at-risk salamanders.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or stochastic events
- Disease and natural predators

Large scale wildfire can directly eliminate individuals and localized populations if the severity is high enough to remove forest litter and woody debris. Fire suppression and past vegetation management have led to increased forest density and fuel loads. Consequently, fires are more intense and can be larger, and forests are more vulnerable to insect and disease outbreaks and drought-related tree mortality. As fire severity and intervals increase with climate change, degradation and loss of habitat for this species would also increase. Large scale fire can directly eliminate individuals and localized populations if the severity is high enough to remove forest litter and woody debris.

Additional threats to this species include disease and natural predators. *Batrachochytrium dendrobatidis* has been documented for the California slender salamander (*Batrachoseps attenuatus*), however, the actual impacts of chytridiomycosis on this species is unknown. Natural predators of this species likely include: spotted and striped skunks, ringtails, raccoons, gray foxes, ring-necked snakes, and various skinks, moles and shrews (Krueger 2016).

Information on Current Distribution of the Species in the Planning Unit

The gregarious slender salamander is endemic to California and occurs along the west slope of the central and southern Sierra Nevada Mountains from the southern boundary of Yosemite National Park almost to the Kern River (Jockusch, Wake, and Yanev 1998). It also occurs along the northwestern and western portion of the Sierra National Forest.

Approximately 26 gregarious slender salamander locations occur on the Sierra National Forest and are recorded in NRIS. There are no locations for the Sierra National Forest in CNDDDB. The locations span from the northwestern portion of the Forest, near Hogan Mountain and run along the western portion of the Forest, with the most site locations occurring in the Blue Canyon area.

Key Ecological Conditions in Plan Area

Key ecological conditions for the gregarious slender salamander include oak woodlands, riparian corridors, forest litter, rocks, down logs and woody debris.

Sierra – Summary

The gregarious slender salamander occurs along the northwestern and western portion of the Sierra National Forest in oak woodlands and the foothills. The biggest threats to this species on the Sierra National Forest are degradation or loss of habitat from ground disturbing activities and fire. These factors combined with direct mortality due to predation, disease, and increased stochastic fire events of high intensity, puts the gregarious slender salamander at significant risk. Forest-plan components to minimize impacts of projects on at-risk species habitat and maintain microclimate and smaller scale elements of special habitats would ensure that habitat for the species exists to the best of the Forest Service's ability. Although the effects of natural disturbances cannot be controlled, forest management activities such as vegetation and fire management would help maintain and protect habitat. Ecosystem-level components should maintain or restore ecological conditions to contribute to maintaining a viable population in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Hell Hollow Slender Salamander – Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Hell Hollow slender salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: In general, slender salamanders do not need standing or flowing water for breeding or any other part of the life cycle. During wet season conditions, slender salamanders can be near the surface and as conditions dry out. Microhabitat may include surface cover such as down wood (in or under logs, under bark or boards), rocks, and litter.

Key Threats to Persistence

Ground disturbance to microsite conditions, degradation or loss of habitat due to ground disturbance, fire or drought. Disease, predators, and invasive species also are threats to this species.

Threats under Forest Service Control

- Degradation or loss of habitat and microsite conditions due to forest management activities
- Competition and predation from invasive species

For terrestrial salamander species, ground disturbance from a variety of sources could directly impact individuals on the surface cover substrate, such as rocks, logs or forest vegetation litter. Fire suppression, vegetation management, and other activities using heavy equipment could degrade slender salamander habitat by disturbing microsite conditions such as woody debris and forest litter.

Forest-wide guidelines to minimize impacts of projects on at-risk species habitat along with desired conditions that maintain microclimate and smaller scale elements of special habitats would alleviate this threat by ensuring that habitat exists to the best of the Forest's ability.

Table D-20. Key Threats, Plan Components and Expected Effects on Hell Hollow Slender Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Degradation or loss of habitat and microsite conditions due to forest management activities	<p>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians including Hell Hollow slender salamander.</p> <p>Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats when possible.</p>
Competition and predation from invasive species	<p>(Reference Crosswalk for Susceptible to Invasive Species)</p>	<p>Ecosystem-level components would minimize the occurrence and spread of invasive species, and thus would reduce threats to at-risk salamanders</p>
Disease/natural predators	<p>Desired Condition (SPEC-FW-DC) 02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impact from threats (e.g. disease and other site-specific threats). Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for species of conservation concern.</p>	<p>Species-specific desired conditions would minimize impacts from threats such as disease and improve conditions for Hell Hollow slender salamander.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk or Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events
- Disease or natural predators

Large scale wildfire can directly eliminate individuals and localized populations if the severity is high enough to remove forest litter and woody debris. Fire suppression and past vegetation management have led to increased forest density and fuel loads. Consequently, fires are more intense and can be larger, and forests are more vulnerable to insect and disease outbreaks and drought-related tree mortality. As fire severity and intervals increase, degradation and loss of habitat for this species would also increase. Large scale fire can directly eliminate individuals and localized populations if the severity is high enough to remove forest litter and woody debris.

Increasing temperatures due to climate change are expected to result in fewer snow events. This change would intensify trends in fire, insect and disease outbreaks, and drought-related tree mortality. Invasive plant species are also expected to increase, especially in the foothills. Once an invasive species dominates a site, fire patterns are expected to change and become more frequent. Warmer temperatures would also dry the ground, wood, litter, and other cover for salamanders, further restricting the movement of this species and the time that they are active each year.

Additional threats to this species include disease and natural and invasive predators. *Batrachochytrium dendrobatidis* has been documented for the California slender salamander (*Batrachoseps attenuatus*), however, the actual impacts of chytridiomycosis on this species is unknown. Natural predators of this species likely include: spotted and striped skunks, ringtails, raccoons, gray foxes, ring-necked snakes, and various skinks, moles and shrews (Krueger 2016).

Information on Current Distribution of the Species in the Planning Unit

The Hell Hollow slender salamander is endemic to the foothills of the western slopes of the Sierra Nevada in California, from the north bank of the north fork of the American River, Placer County, to the lower Merced River canyon, Mariposa County (Jockusch, Wake, and Yanev 1998, Hansen and Wake 2005, Evelyn and Sweet 2018b)

A single record exists for the Hell Hollow slender salamander on the Sierra National Forest. This NRIS record is located near Merced River in Mariposa County, which is the southern extent of the known range for this species. No locations are recorded in CNDDB for the Sierra at this time.

Key Ecological Conditions in Plan Area

Key ecological conditions for the Hell Hollow slender salamander include pine-oak woodlands and chaparral habitat, along riparian zones in close proximity to large rivers and streams. North-facing slopes are preferred, and individuals are usually found beneath rock talus and large stones and other surface cover shaded by oak trees that dominate the region. Summer temperatures are extreme with little to no rainfall.

Sierra – Summary

A single record exists for the Hell Hollow slender salamander on the Sierra National Forest along the Merced River in the northwest portion of the Sierra National Forest. The biggest threats to this species on the Sierra National Forest are degradation or loss of habitat from ground disturbing activities, climate change and fire. These factors combined with direct mortality due to predation, disease and increased stochastic fire events of high intensity, puts the Hell Hollow slender salamander at significant risk. Given the limited occurrence of the species on the Forest, a single disturbance event could eliminate the Forest population. Therefore, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Hell hollow slender salamander within the plan area. Nonetheless, ecosystem-level components should help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Kern Canyon Slender Salamander – Sequoia

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the Kern Canyon slender salamander in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: North-facing riparian zones in narrow canyons shaded with willows and cottonwoods, wooded hillsides supporting oaks and pines, including wet creek margins, seeps, talus, and exposed chaparral.

Key Threats to Persistence

Ground disturbance to microsite conditions, degradation or loss of habitat due to ground disturbance, fuels reduction and road construction and maintenance. Other activities that may pose a threat include water storage or diversion projects, disease, natural predators, timber harvest, surface mining, and climate change.

Threats under Forest Service Control

- Degradation or loss of habitat and microsite conditions due to forest management activities

For terrestrial salamander species such as the Kern Canyon slender salamander, ground disturbance from a variety of sources could directly impact individuals on the surface cover substrate, such as rocks, logs or forest vegetation litter. Fire suppression, vegetation management, and other activities using heavy equipment could degrade slender salamander habitat by disturbing microsite conditions such as woody debris and forest litter. Evidence of human disturbance such as roads and trails along the banks of the Kern River is depicted in many areas within the Kern River Canyon. Recreational sites such as picnic areas and boat pullouts are concentrated along the Kern River and may directly impact habitat for the Kern River slender salamander.

Table D-21. Key Threats, Plan Components and Expected Effects on Kern Canyon Slender Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
<p>Degradation or loss of habitat and microsite conditions due to forest management activities</p>	<p>(Reference Crosswalk or Susceptible to Stochastic Events, and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians, including Kern Canyon slender salamander.</p> <p>Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats.</p>
<p>Habitat loss and degradation from altered flow regimes and temperatures in streams and rivers due to dams.</p>	<p>(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Open Water Dependent)</p>	<p>Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining populations of aquatic and semi-aquatic species such as Kern Canyon slender salamander.</p> <p>Control of impacts from dams and hydroelectric use is beyond Forest control, but plan components to maintain adequate timing and quantity of water flows and sustain water quality would help reduce effects.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Disease/natural predators	Desired Condition (SPEC-FW-DC) 02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impact from threats (e.g. disease and other site-specific threats). Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for species of conservation concern.	Species-specific desired conditions would minimize impacts from threats such as increased predator populations and improve conditions for at-risk salamanders.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Forest-wide guidelines to minimize impacts of projects on at-risk species habitat along with desired conditions that maintain microclimate and smaller scale elements of special habitats would alleviate this threat by ensuring that habitat exists to the best of the Forest's ability.

Threats Not Under Forest Service Control

- Habitat loss and degradation from altered flow regimes and temperatures in streams and rivers due to dams.
- Disease or natural predators
- Habitat loss or degradation due to climate change or other stochastic events

California State Route 178 occurs in Kern Canyon and its construction likely removed habitat for the Kern Canyon slender salamander. Roads of other ownership such as the Old Kern River Canyon Road are likely to have removed habitat for this species as well. The maintenance of roads may also present a threat to this species as asphalt, gravel, and other materials may be placed in potential habitat. Grazing occurs along the banks of the Kern River in Kern Canyon and may be disturbing habitat for the Kern Canyon slender salamander. Grasslands are widespread along both sides of the Kern River and likely support cattle grazing most years.

There is potential for wildfire in Kern Canyon to adversely affect habitat for this species. A 370-acre wildfire occurred August 18, 2018 and closed California State Route 178. Wildfire may directly remove vegetation and create non-habitat. Vegetation loss may also lead to soil erosion which could impact habitat for this species.

Currently, while there are water diversion structures in Kern Canyon there are no water storage projects that are planned to be located in the Kern Canyon. Lake Isabella is located upstream of Kern Canyon and there is potential for flows from Lake Isabella to impact habitat by altering the

hydrology of the Kern River and adversely affecting habitat for this species. Water use and water diversion projects are outside the authority of the Forest Service.

Increasing temperatures due to climate change are expected to result in fewer snow events. This change would intensify trends in fire, insect and disease outbreaks, and drought-related tree mortality. Invasive plant species are also expected to increase, especially in the foothills. Once an invasive species dominates a site, fire patterns are expected to change and become more frequent. Warmer temperatures would also dry the ground, wood, litter, and other cover for salamanders, further restricting the movement of this species and the time that they are active each year. Additional threats to this species include disease and natural predators.

Information on Current Distribution of the Species in the Planning Unit

There are 11 sites documented for the Sequoia National Forest in CNNDDB. All sites occur on the eastern side of the Greenhorn Mountains, from just south of Isabella Lake, along the Kern River corridor (Jockusch and Wake 2002, Jockusch et al. 2012, United States Department of Agriculture 2013a). There are no records in the NRIS database for the Kern Canyon slender salamander on the Sequoia National Forest.

Key Ecological Conditions in Plan Area

This species is endemic to the Sequoia National Forest and is known only from the lower Kern River Canyon. All occurrence records are from the north-facing (south) side of the canyon. Occurrences within the Kern River Canyon are shaded with willows and cottonwoods. Occurrences are also found along wooded hillsides supporting oaks and pines.

Sequoia – Summary

The Kern Canyon slender salamander is endemic to the Sequoia National Forest. This species is restricted to a small area along the Kern River corridor, in the Kern River Canyon, on the Sequoia National Forest. The biggest threats to this species on the Sequoia National Forest are degradation or loss of habitat from ground disturbing activities, such as recreation, road construction, user-created trails, and wildfire. These factors combined with direct mortality due to cattle grazing, predation, disease, and climate change, put the Kern Canyon slender salamander at significant risk. Forest-plan components to minimize impacts of projects on at-risk species habitat and maintain microclimate and smaller scale elements of special habitats would ensure that habitat for the species exists to the best of the Forest's ability. Although the effects of natural disturbances cannot be controlled, forest management activities such as vegetation and fire management would help maintain and protect habitat. Ecosystem-level components should maintain or restore ecological conditions to contribute to maintaining a viable population in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Kern Plateau Salamander – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Kern Plateau salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Table D-22. Key Threats, Plan Components and Expected Effects on Kern Plateau Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Degradation or loss of habitat and microsite conditions due to forest management activities	<p>(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians including Kern Plateau salamander if present.</p> <p>Ecosystem-level guidelines for fire management and recreation would minimize disturbance to microsite habitat for Kern Plateau salamander.</p>
Habitat loss or degradation due to climate change or stochastic events	<p>(Reference Crosswalk for Susceptible to Stochastic Events)</p>	<p>The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.</p>

General Key Ecological Conditions: Perennially wet and moist habitat, usually associated with rocky outcrops or rock substrate, along the eastern escarpment of the Sierra Nevada Mountains. Wet meadows surrounded by mixed conifer.

Key Threats to Persistence

Endemic species with very restricted range size found only on the Kern Plateau. Threats include off-highway vehicle travel, climate change effects, and ground disturbance to habitat from road construction and maintenance, timber harvesting, and vegetation treatments (i.e. fuels reductions, prescribed burning, and hazard tree removal).

Threats under Forest Service Control

- Degradation or loss of habitat and microsite conditions due to forest management activities

In the drier portions of its range, the spring and riparian habitats these species occupy are fragile and vulnerable to damage. Off-road vehicle use is a threat for populations that are in heavily used recreation areas for off road vehicles, and areas with logging roads and high to moderate road density. Timber harvesting and hazard tree removal on the Kern Plateau are currently planned and may contribute to the degradation of habitat. Vegetation management and fire suppression activities also contribute to degradation of habitat.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

Wildfire risk is moderate to high on the Kern Plateau, at the lower elevations of its range and wildfire has impacted the Scodie Mountain populations. Water diversions are a threat on the Kern Plateau where the salamanders use springs and moist areas; water diversions from the occupied springs would likely reduce the extent of the wetted in-channel and riparian areas. Water resource management activities, including maintaining perennial water quality, quantity, and timing of flows from water storage areas play a critical role in overall ecological function and sustainability of groundwater-dependent ecosystems and most of these activities are regulated outside the national forest boundary. Water diversions are a threat on the Kern Plateau where the salamanders use springs and moist areas. Water diversions from the occupied springs would likely reduce the extent of the wetted in-channel and riparian habitats. Aquatic habitats are vulnerable to degradation through capping of springs by humans or other alterations due to drought (Giese, Greenwald, and Curry 2012).

Climate change has the potential to impact all populations if snowpack and runoff conditions are significantly altered. Reductions in snowpack, and changes in infiltration that reduce spring flow and riparian development could affect the Kern Plateau and Scodie Mountains populations. The climate change modeling completed by (Wright et al. 2013) indicated a slight reduction (up to 20 percent) in habitat suitability by the year 2050. However, recent drought goes beyond the changes envisioned in 2013 and may expedite the loss of suitable habitat beyond 20 percent.

Information on Current Distribution of the Species in the Planning Unit

The Kern Plateau salamander has been detected at 36 sites, mainly from the Kern Plateau in the Sierra Nevada, but including a few isolated populations from the Owens Valley and the Scodie Mountains in eastern California. It is abundant on the Kern Plateau especially in mesic areas, and found in nearly every drainage in the eastern Sierra from Walker Creek (east of Olancho) to Nine

Mile Creek. Information on population status and trend is not available, but the species is considered to be common in most of its range and populations stable (Wake et al. 2002).

Key Ecological Conditions in Plan Area

The species is in mid- to high elevations, ranging from 4,690 to 9,190 feet. Typical habitats are variable depending on the locality, ranging from mesic red fir/lodgepole pine at mid- to upper elevations of the Plateau, to subalpine (wet meadow) habitats at high elevations in the Sierra Nevada, to springs located in desert scrub (Wake et al. 2002). Surface activity for salamanders present at elevations below 6,562 feet is restricted to late winter and early spring, before surfaces heat up and lose their moisture. At high elevations, their activity is restricted to between the months of May or June to October, when temperatures are warmer and snow levels have dropped enough to provide conditions for courtship and egg-laying (Giese, Greenwald, and Curry 2012).

Sequoia – Summary

The Kern Plateau salamander on the Sequoia National Forest plan area is restricted to areas on the Kern Plateau, Sherman Peak and Scodie Mountains. The biggest threats to this species on the Sequoia National Forest are ground disturbing activities that degrades habitat through capping of springs or alterations of spring water, such as unauthorized off-highway vehicle travel, road construction, surface mining and vegetation treatments. These factors combined with increased stochastic fire events of high intensity, along with climate change, put the Kern Plateau slender salamander at significant risk. The Forest has a number of ecosystem-level plan components in place to mitigate risks within its management authority. However, risk factors including climate change, groundwater pumping and water diversions that occur outside the national forest are not within Forest Service management authority. These factors would continue to impact spring habitat making it difficult to maintain viability over the long-term. Therefore, it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Kern Plateau salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

King's River Slender Salamander – Sierra

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the King's River slender salamander in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: Kings River slender salamanders are found along streams and moist canyons, in valley foothill riparian habitat, blue oak woodland and mixed conifer woodland (Kucera 2005). This type habitat for this species is well-shaded, mixed chaparral on north-facing slopes.

Table D-23. Key Threats, Plan Components and Expected Effects on King's River Slender Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
<p>Degradation or loss of habitat and microsite conditions due to forest management activities</p>	<p>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians, including King's River slender salamander. Ecosystem-level guidelines for fire management and recreation would minimize disturbance to salamander microsites when possible.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss and degradation due to altered flow regimes, temperatures, water quality and quantity in streams and rivers due to dams and water use	(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Seeps/Springs Dependent, Wet/Riparian Meadow Dependent)	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining populations of aquatic species including at-risk salamanders. Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians, including King's River slender salamander. Control of impacts from dams and hydroelectric use is beyond Forest control, but plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk or Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Ground disturbance to microsite conditions, degradation or loss of habitat due to ground disturbance or fire. Water quantity and quality, including stream morphology and temperatures.

Threats under Forest Service Control

- Degradation or loss of habitat and microsite conditions due to forest management activities

Ground disturbance that alters or removes ground cover, including woody debris and forest litter can directly impact this salamander.

Water quality and quantity are at present well within the natural range of variability in most areas of the forest. However, climate change is a stressor which may limit water quality and quantity in the future. Watersheds are overall in good condition, and most can recover from most stressors imposed by human influence or are within the natural range of variability. However, invasive species, fire, and climate change remain stressors on watershed condition for the Sierra National Forest (United States Department of Agriculture 2013b).

Ecosystem-level plan components to maintain and improve riparian, oak woodland, foothill, and aquatic habitats would provide for King's River slender salamander persistence. Forest-wide guidelines to minimize impacts of projects on at-risk species habitat along with desired conditions that maintain microclimate and smaller scale elements of special habitats would alleviate forest management activity threats by ensuring that habitat exists to the best of the Forest's ability.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events.

As fire severity and intervals increase, degradation and loss of habitat for this species would also increase. More climate change is expected and warmer temperatures, along with more rain than snow are occurring. This change will intensify trends in fire, insect and disease outbreaks, and drought-related tree mortality. Invasive plant species are also expected to increase, especially in the foothills. Once an invasive species dominates a site, fire patterns are expected to change and become more frequent. Land management activities that degrade or remove ground cover or forest litter can also further impact this species (United States Department of Agriculture 2013b). Warmer temperatures will also dry the ground, wood, litter, and other cover for salamanders, further restricting the movement of this species and the time that they are active each year. Additional threats to this species include disease and natural predators as described for other slender salamanders.

Information on Current Distribution of the Species in the Planning Unit

The Kings River slender salamander is endemic to California. This species is found on the western slopes of the Sierra Nevada in Fresno County on the south and east sides of the North Fork of the Kings River, and from Summit Meadow in the drainage of the South Fork of the Kings River. It is also found on the middle fork of the Kaweah River drainage in Tulare County (Jockusch, Wake, and Yanev 1998).

Records exist for this species on the Sierra National Forest and are restricted to the Kings River area. Location data is recorded in both NRIS and CNDDDB.

Key Ecological Conditions in Plan Area

Key ecological conditions for the Kings River slender salamander include pine-oak woodlands and chaparral habitat, along riparian zones in close proximity to large rivers and streams. Individuals are usually found beneath rock talus and large stones and other surface cover shaded by oak trees that dominate the region.

Sierra – Summary

The Kings River slender salamander is restricted to the Kings River area on the Sierra National Forest. The biggest threats to this species on the Sierra National Forest are degradation or loss of habitat from ground disturbing activities and fire. Forest-plan components to minimize impacts of projects on at-risk species habitat and maintain microclimate and smaller scale elements of special habitats would ensure that habitat for the species exists to the best of the Forest's ability. Ecosystem-level components should maintain or restore ecological conditions to contribute to maintaining a viable population in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Limestone Salamander – Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the limestone salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Table D-24. Key Threats, Plan Components and Expected Effects on Limestone Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Degradation or loss of habitat to microsite conditions due to recreation or mining.	(Reference Crosswalk for Disturb Intolerant)	Ecosystem-level plan components would protect sensitive habitats, including caves and mines, and manage recreation opportunities to limit disturbance to sensitive species such as limestone salamander.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in habitats being more resilient to stochastic events.

General Key Ecological Conditions: These salamanders are typically found in association with limestone. They can also be found under slate slabs, irregularly shaped limestone pieces, moss-covered and barren talus, in rock crevices and in abandoned mine tunnels.

Key Threats to Persistence

Disturbance, degradation or loss of habitat to microsite conditions due to recreation or mining activities. Loss of habitat due to fire or climate change.

Threats under Forest Service Control

- Degradation or loss of habitat to microsite conditions due to recreation or mining activities

Habitat alteration such as development for mining, road widening or construction, limestone quarrying and dam building likely pose the greatest threat to this species. As few studies have investigated this species, additional research needs to be conducted to determine what threats are most significant for this species.

As fire severity and intervals increase, degradation and loss of habitat for this species will also increase. Habitat loss and degradation from mining, vegetation management, road construction, water development, or other forest management activities may occur in the foreseeable future.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or stochastic events

As with other species with a limited range, stochastic events are a significant threat to the persistence of this species. Events such as fire, flood, disease, habitat alteration, or climate change can significantly impact a restricted range animal. Fire likely has only minimal impact to this species; however, fire suppression activities may disturb habitat. No studies have investigated the impact of *Batrachochytrium dendrobatidis* on this species; however, its highly terrestrial lifecycle puts it less at-risk for serious impact.

Habitat changes associated with climate change such as warmer temperatures and drought are also expected. This change will intensify trends in fire, insect and disease outbreaks, and drought-related tree mortality. As a result, microsite conditions on rocky steep slopes that include high humidity and moisture will be impacted (United States Department of Agriculture 2013b).

Information on Current Distribution of the Species in the Planning Unit

Limestone salamanders are an endemic salamander species found in a small area in Mariposa County, California (Basey and Sinclear 1980, Evelyn and Sweet 2018a). The total known extent of this species range is approximately sixteen to seventeen kilometers in length along the Merced River. Specifically, this salamander occurs from the vicinity of the type locality on state route 140 west to Hell Hollow and slightly up the North Fork of the Merced River (Wake and Papenfuss 2005).

Records exist for this species on the Sierra National Forest and are restricted to the Hell Hollow and Merced River area. Location data is recorded in both NRIS and CNDDB.

Key Ecological Conditions in Plan Area

Key ecological conditions for this species included mossy limestone crevices and talus, typically on steep slopes where moisture and high humidity are retained. Caves and abandoned mines can also provide these ecological conditions. Although this species has a restricted habitat, limestone habitat on the Sierra National Forest is not limited.

Sierra – Summary

The limestone salamander is restricted to a small area along the Merced River on the Sierra National Forest. The biggest threats to this species on the Sierra National Forest are degradation or loss of habitat from ground disturbing activities, such as mining and heavy recreation use. These factors combined with direct mortality due to predation, disease and increased stochastic fire events of high intensity, along with climate change, puts the limestone salamander at significant risk. Given the limited occurrence of the species in the plan area, a single disturbance event could eliminate the population. Therefore, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of limestone salamander within the plan area. Nonetheless, ecosystem-level components should help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Relictual Slender Salamander – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the relictual slender salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Seeps and springs in rocky areas with sparse tree cover consisting mostly of oaks, along with scattered pines, buckeyes and sycamores in creek bottoms (Thomson, Wright, and Shaffer 2016). This species is rarely found far from surface water (Jockusch et al. 2012).

Table D-25. Key Threats, Plan Components and Expected Effects on Relictual Slender Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Degradation or loss of habitat due to forest management activities	<p>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians, including relictual slender salamander, if present. Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats when possible.</p>
Habitat loss or degradation due to climate change or stochastic events	<p>(Reference Crosswalk for Susceptible to Stochastic Events)</p>	<p>The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.</p>

Key Threats to Persistence

Any direct or indirect ground or water disturbing impacts to habitat such as fire, timber harvest, unauthorized off-road vehicle travel, road construction, and livestock grazing.

Threats under Forest Service Control

- Degradation or loss of habitat due to forest management activities.

Surface mining and timber harvest can contribute to habitat degradation by direct removal of vegetation, ground disturbing activities, and by contributing to erosion. However, these activities have decreased substantially over the past 20 years, and as a result, ground disturbance from these activities has also decreased.

For this salamander species, degradation of habitat, particularly sensitive spring and seep habitat has been responsible for extirpation from a significant portion of its range. Ground-based disturbance from a variety of sources in or near these sensitive aquatic habitats directly impact individuals on the surface or under rocks, logs or forest litter. This species is most threatened by degradation or loss of habitat. Ground disturbance such as temporary roads or user-created roads that alter or remove ground cover, including woody debris and forest litter, can directly impact this species.

Road construction associated with timber harvest has been identified as a threat to *B. relictus* habitat. Previous road construction on Breckenridge Mountain apparently eliminated a portion of the suitable microhabitat at Squirrel Meadow (Jennings and Hayes 1994, Jockusch et al. 2012). When the road was built the seep where *B. relictus* had been found was graded over destroying the original site and altering the flow of the seep by filling it with road fill.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events.

The potential for fire on the landscape is high. As fire severity and intervals increase, degradation and loss of habitat for this species would also increase. Large scale fire can directly eliminate individuals and localized populations if the severity is high enough to remove forest litter and woody debris. Fire suppression has impacted riparian habitat by increasing conifer density and decreasing riparian hardwood and herbaceous vegetation.

Decreased snow pack resulting from climate change may influence seeps and streams used by this species (Thomson, Wright, and Shaffer 2016). This species is rarely found far from surface water and changes in stream morphology could impact micro-site conditions. The California Department of Fish and Wildlife rated this species as being highly vulnerable to climate change (California Department of Fish and Wildlife 2015). An assessment conducted in 2015 identified *B. relictus* as a “Priority I” taxa that were identified as being the most at-risk from drought related conditions (California Department of Fish and Wildlife 2015). Additional threats to this species include disease and natural predators as described for other slender salamanders.

Information on Current Distribution of the Species in the Planning Unit

This species is endemic to the Sequoia National Forest and has the most restrictive range of all slender salamanders. The two locations on Breckenridge Mountain that are separated by 3.1 miles. There are 7 CNNDDB records for this species in the Breckenridge Mountains, and records in the NRIS database. The entire known distribution for *B. relictus* is along the Lower Kern River

(believed extirpated) and two other locations on Breckenridge Mountain. All currently known populations of relictual slender salamander are above 1,700 meters in elevation, including two along Lucas Creek and one in the vicinity of Squirrel Meadow (Jockusch et al. 2012).

Key Ecological Conditions in Plan Area

Key ecological conditions for this species include seeps and springs in rocky areas with sparse tree cover consisting mostly of oaks, along with scattered pines, buckeyes and sycamores in creek bottoms (Thomson, Wright, and Shaffer 2016). On Breckenridge Mountain, the dominant vegetation is pine-fir forest and embedded seeps in upland areas or along streams is where these salamanders were found (Jockusch et al. 2012).

Sequoia – Summary

The relictual slender salamander is restricted to the Breckenridge Mountain area on the Sequoia National Forest. The key threats to this species are degradation or loss of habitat from ground disturbing activities, user created routes, temporary roads going through seeps, fire suppression activities and changes in stream morphology that may impact riparian micro-site conditions. Habitat degradation or destruction, unauthorized user created routes, local extirpations, endemism, and climate change put the relictual slender salamander at significant risk. There is substantial concern about this species ability to persist on the planning unit. Due to the limited distribution and threats outside the authority of the Forest Service it is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Yellow-blotched Salamander – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the yellow-blotched salamander in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Coniferous forest, deciduous forest, oak woodland, coastal sage scrub, and chaparral with microsites under logs, bark, moss, leaf litter, and talus or in animal burrows, often near streams and creeks.

Key Threats to Persistence

Ground disturbance to microsite conditions, degradation, or loss of habitat due to ground disturbance or fire. Water quantity and quality, including stream morphology and temperatures. Climate change and associated changes in rainfall and temperature.

Threats under Forest Service Control

- Habitat loss or disturbance due to forest management activities.

Table D-26. Key Threats, Plan Components and Expected Effects on Yellow-blotched Salamander

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
<p>Degradation or loss of habitat and microsite conditions due to forest management activities</p>	<p>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</p> <p>Desired Condition SQF (WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p> <p>Desired Condition SNF(WTR-RCA-DC) 04 Native fish, amphibians, and other native aquatic species are present within their historic distribution, adjusted for climate change. Habitat conditions support self-sustaining populations, except where distributions are altered by areas managed for desirable nonnative fish species. Streams and rivers provide a variety of habitats for aquatic species, including deep pools and overhanging banks, structure provided by large wood, off-channel areas, and cover within their natural range of variation. Woody and herbaceous overstory and understory regulate stream temperatures. Aquatic and upland components are linked, providing access to food, water, cover, nesting areas, and protected pathways for aquatic, riparian, and upland species.</p>	<p>Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians, including yellow-blotched salamanders. Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats when possible.</p>

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss and degradation due to altered flow regimes, temperatures, water quality and quantity in streams and rivers due to dams and water use	(Reference Crosswalk or Susceptible to Stochastic Events, Riparian/Water Dependent, Seeps/Springs Dependent, Wet/Riparian Meadow Dependent)	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining populations of aquatic species. Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species and historic distributions of amphibians. Control of impacts from dams and hydroelectric use is beyond Forest control, but plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects. Expansion of hydropower development is unlikely on Sequoia National Forest due to being already fully developed.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Habitat disturbance from roads, temporary roads, motorized trails, or user created routes in riparian areas could directly impact individuals on the surface or under rocks, logs, or forest litter. Ground disturbance that alters or removes ground cover, including woody debris and forest litter can directly impact this species. Recreational use of the forest is projected to increase (United States Department of Agriculture 2013a). Land management activities that disturb soils or block connectivity; degrade or remove ground cover or forest litter can also further impact this species.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events.

This species is vulnerable to stochastic events such as fire or climate change. Large-scale fire can result in mortalities to individuals and decrease or eliminate local populations if the high severity fire burns riparian cover, soils, and litter and woody debris. As climate change reduces the snowpack, seeps and other moist areas along streams and rivers may dry affecting connectivity for this species. Warmer temperatures may also contribute to drying of riparian habitats. Direct mortality to individuals of this species may occur from traffic along riparian areas during collisions with salamanders as they move during spring wet events. Motor vehicle trails within riparian areas, temporary road construction in riparian areas, and roads in narrow canyons can all cause direct mortality and effect habitat connectivity. Additional threats to this species include disease and natural predators as described for other salamanders.

Information on Current Distribution of the Species in the Planning Unit

This species is endemic to California and has one of the most restrictive ranges of all *Ensatina* salamanders. There are six CNDDDB records for this species on the Sequoia National Forest plan area, located on the eastern side of the Breckenridge Mountains, from just south of Isabella Lake, along southern side of the Kern River corridor and on Piute Peak (Kuchta et al. 2009). (Germano 2006) also found this species to be common in tributaries to the lower Kern Canyon. There are no NRIS records on the Sequoia National Forest.

Key Ecological Conditions in Plan Area

Yellow-blotched salamanders are positively associated with canyon live oak, and negatively associated with blue oak. The salamanders were found under rocks and logs at an average elevation of about 1,800 feet. Occasionally this species is found under rocks and logs often in moist canyons on northerly-facing slopes (Germano 2006). Flat or gently sloping shelves above flood level combined with forest edge habitats support the highest abundances of yellow-blotched salamanders (Kuchta and Parks 2005).

Sequoia – Summary

The yellow-blotched salamander on the Sequoia National Forest is restricted to the southern side of the Kern River corridor and Piute Peak area. The biggest threats to this species on the Sequoia National Forest are degradation or loss of habitat from ground disturbing activities, fire suppression activities and changes in moisture levels that may impact riparian micro-site conditions. These factors combined with direct mortality due to predation, disease, roads, motor vehicle trails, user created routes, and drought, put the yellow-blotched salamander at significant risk. Due to the limited distribution and low occurrence records it is unknown if the plan area supports a current viable population. Furthermore, threats outside the authority of the Forest Service puts this species at-risk. Based on this evaluation it is not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions to contribute to maintaining a viable population of the species within its range.

Fish

California Golden Trout – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the California golden trout in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Key ecological conditions for California golden trout include clear and cold water, although summer temperatures can fluctuate from 3 to 20 degrees Celsius. California golden trout generally prefer pool habitat and congregate near emergent sedges and undercut banks. Shading of streams by willows and other shrubs keep the daytime summer temperatures less than 21 degrees (Matthews 2016).

Table D-27. Key Threats, Plan Components and Expected Effects on California Golden Trout

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Hybridization with rainbow trout; Competition and predation from non-native trout	(Reference Crosswalk for Susceptible to Invasive Species) Goal (SPEC-GT-GOAL) 01 Continue to coordinate and collaborate with CDFW to implement and renew the California Golden Trout Conservation Assessment and Strategy.	Ecosystem-level components would minimize the occurrence and spread of invasive species to the extent possible, and thus would reduce threats to California golden trout. Species-specific goal would partner with CDFW to incorporate California golden trout conservation strategies.
Habitat loss or degradation from forest management activities including grazing and recreation	(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Open Water Dependent)	Ecosystem-level plan components for Terrestrial Ecosystems (TERR), Watersheds (WTR), Riparian Conservation Areas (RCA), Management Areas (MA), Designated Areas (DA), Fire Management (FIRE), Species Direction (SPEC), Rangeland Management (RANG), and Timber Management (TIMB) ensure at-risk fish species would have adequate habitat for movement, dispersal, feeding, and reproduction and provide direction for maintaining key habitat elements. Forest plan components for grazing and recreation would avoid or limit disturbance to riparian areas and sensitive species. Together, these plan components would reduce the threat of fish habitat degradation, and may even improve previously impaired conditions.
Recreational fishing	Desired Condition (SPEC-FW-DC) 04 Habitat for nonnative fish and game species is managed in locations and ways that do not pose substantial risk to native species, while still contributing to economies of local communities Goal (SPEC-GT-GOAL) 01 Continue to coordinate and collaborate with CDFW to implement and renew the California Golden Trout Conservation Assessment and Strategy.	The threat of overfishing is addressed by the Conservation Assessment and Strategy for the California Golden Trout. Forest goal (SPEC-GT-GOAL) 01 would work with CDFW to use these documents to protect golden trout,
Limited distribution	(Reference Crosswalk for Special Habitats and Limited Distributions)	The Forest Service cannot directly control the effects of a limited distribution; however, ecosystem-level components designed to improve conditions in existing habitat would make increase the capability of these areas to support populations
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

The main threats to California golden trout are hybridization with rainbow trout, competition and predation from non-native trout, grazing, recreation, limited distribution, and climate change.

Threats under Forest Service Control

- Habitat loss or degradation due to forest management activities
- Hybridization with rainbow trout
- Competition and predation from non-native trout

The primary threat to California golden trout is hybridization with rainbow trout and competition and predation by brown trout (Moyle 2002, Stephens, McGuire, and Sims 2004). Hybridization undermines the unique genetic integrity of the golden trout, which results in a loss to the gene pool of the species (Stephens, McGuire, and Sims 2004). Loss of genetic integrity may make the species more vulnerable to changes in the environment. CDFW and the Forest Service have worked cooperatively to improve conditions for golden trout including removal of obviously hybrid fish, the establishment of barriers to prevent the upstream movement of fish other than golden trout, and the stocking of sterile rainbow trout in popular recreational fisheries in close proximity to occupied golden trout waters (Stephens, McGuire, and Sims 2004). The proposed action to *Maintain the native-fish-only status of Little Kern River and upper North Fork Kern River through remedial actions to remove invasive species, increase public education, provide signage, and provide law enforcement* along with ecosystem-level components that emphasize controlling current invasive species and preventing their spread would help to reduce this threat.

Overfishing and heavy grazing were primary stressors in the 19th and first half of the 20th century. Generally, livestock impacts from overgrazing include a reduction in deep water habitats, detrimental sedimentation, reduced stream shading, loss of instream and riparian cover, and alterations in food resources; however, current cattle management on the forest focuses on restoring the hydrologic and vegetative function of meadows in golden trout habitat. Managing grazing to reduce impacts to riparian areas would prevent further degradation. Forest-wide components would ensure watershed conditions are fully functioning and support self-sustaining populations. Fishing opportunities and recreation uses are expected to continue, and impacts from those activities would continue to occur. Angling opportunities on the Forest do include the chance to catch California Golden Trout in their native habitat of the South Fork Kern River and Golden Trout Creek. A hatchery exists in the Cottonwood Lakes drainage, which is used to transplant the Golden Trout into other lakes within the Sierra Nevada Mountains. The California Department of Wildlife is expected to continue this fish stocking program, to help augment populations. Furthermore, achieving the Desired Condition (SPEC-FW-DC) 04 *Habitat for nonnative fish and game species is managed in locations and ways that do not pose substantial risk to native species, while still contributing to economies of local communities* would limit the risk of overfishing.

Potential threats are all addressed by the Conservation Assessment and Strategy for the California Golden Trout (Stephens, McGuire, and Sims 2004). Additionally, a Comprehensive Management Plan for the North Fork and South Forks of the Kern Wild and Scenic River was completed in September 1994 (United States Department of Agriculture 1994) and provides overall management direction for the Wild and Scenic River.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events.
- Limited distribution

CDFW's state wildlife action plan listed the California golden trout as vulnerable to climate change. Climate change has the potential to further reduce the range of the California golden trout, primarily through increased water temperatures. Based on recent water temperature monitoring, daily maximum temperatures currently approach the upper thermal limit commonly recognized for rainbow trout. Climate change modeling predicts water temperature increases of 1 to 7 degrees Centigrade (Nussle, Matthews, and Carlson 2015). Temperature increases of this magnitude could exceed the thermal maximum for rainbow trout in some streams and reach physiologically stressful levels in other occupied streams. Other commonly acknowledged outcomes of climate change include reduced snowpack and earlier snowmelt (California Department of Fish and Wildlife 2015). These impacts, in conjunction with extended drought, may result in less abundance and reliable streamflow, and therefore make the species more vulnerable to water temperature increases because of reduced volume and duration. Hydroelectric use may exacerbate these effects as water temperatures downstream of dams are affected by volume of flow and temperature of the upstream reservoir. Although the Forest is unable to directly control for climate changes or water use, Forest-wide components designed to increase the resilience of watersheds to the effects of climate changes would help maintain viable trout habitat over the life of this plan.

California golden trout is restricted in range to two headwater stream systems in the upper Kern River. In many areas in the South Fork Kern River, habitat occurs in degraded meadows characterized by poor riparian and streambank conditions and widened, shallow channels. Although the Forest is unable to control the species range, Forest-wide components to generally improve watershed conditions would increase the ability of current habitat to support self-sustaining populations.

Information on Current Distribution of the Species in the Planning Unit

The distribution of the California golden trout is restricted to the South Fork Kern River system on the Sequoia National Forest and is downstream from the falls into Golden Trout Creek on the North Fork Kern River.

Key Ecological Conditions in Plan Area

Key ecological conditions for California golden trout include clear and cold water. On the Sequoia National Forest, 43 percent of watersheds were considered to be properly functioning, and these are the watersheds that contain habitat for Golden trout in the South Fork Kern River (United States Department of Agriculture 2013a).

Sequoia – Summary

The California golden trout is an endemic fish species, limited to a small portion of suitable habitat on the Sequoia National Forest. The ecological conditions the trout appear generally stable and or trending in a positive direction based on current management, but there is still substantial concern for the species persistence due to its rarity coupled with the potential for genetic loss and competition from non-native fish species. Uncertainty about climate change related effects pose an additional long-term threat, and temperatures are already approaching the species' upper thermal limit. Drought, dams, and water use exacerbate this threat. As a result of its rarity and

limited distribution, this species is highly susceptible to stochastic events and drying conditions that may result from increasing temperatures and other climate change related disturbance in the future. Its isolated populations put it at further risk for localized extinctions. Ecosystem-level components to manage invasive species, improve riparian ecosystems, and protect at-risk species would alleviate but not fully eliminate threats to this species. Daily maximum temperatures currently approach the upper thermal limit commonly recognized for rainbow trout (Nussle, Matthews, and Carlson 2015), and water temperatures are predicted to increase. Given that this main threat is outside of Forest Service control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of California golden trout within the plan area. Nonetheless, ecosystem-level components should help maintain or restore ecological conditions within the plan area.

Central Valley Hitch – Sequoia/Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Central Valley hitch in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Habitat requirements for this species include warm, lowland, waters, clear streams, turbid sloughs, lakes and reservoirs.

Table D-28. Key Threats, Plan Components and Expected Effects on Central Valley Hitch

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Competition and predation from invasive species	<i>(Reference Crosswalk for Susceptible to Invasive Species)</i>	Ecosystem-level components would minimize the occurrence and spread of invasive species, and thus would reduce threats to the Central Valley hitch.
Habitat loss and changes in water quantity or quality due to forest management activities; Fragmented watershed conditions and altered flow regimes and temperatures in streams and rivers due to dams	<i>(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Open Water Dependent)</i>	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining fish populations. Control of impacts from dams and hydroelectric use is beyond Forest control, but plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects to fish habitat.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality

Key Threats to Persistence

The main threats to this species are fragmented watershed conditions due to dams, altered flow regimes and temperatures in streams and rivers for hydroelectric power, changes in water quantity or quality, habitat loss, competition and predation from invasive species, drought and climate change.

Threats under Forest Service Control

- Habitat loss or degradation due to forest management activities
- Competition and predation from invasive species

Predation by non-native, introduced fishes are a major threat to this species, and non-native fishes have been introduced or have invaded most waters of the range. These waters include extensive areas that were once fishless at high elevations. Sierra Nevada fisheries have largely shifted from native fishes, especially salmon and other migratory fishes, to introduced fishes (United States Department of Agriculture 2013a, b). The proposed action to *Maintain the native-fish-only status of Little Kern River and upper North Fork Kern River through remedial actions to remove invasive species, increase public education, provide signage, and provide law enforcement* along with ecosystem-level components that emphasize controlling current invasive species and preventing their spread would help to reduce this threat.

The upper San Joaquin River and other areas where habitat exists may be at-risk as recreational use increases (United States Department of Agriculture 2013a, b). Existing conditions of habitat and fisheries on both Forests have been influenced by a variety of drivers, including recreation and grazing. Ecosystem-level components to reduce impacts of forest management activities to riparian areas would prevent further degradation. Ecosystem-level components for watersheds, waterbodies and aquatic and riparian areas would ensure habitat conditions, including water quantity and quality, are fully functioning and support self-sustaining populations.

Threats Not Under Forest Service Control

- Fragmented watershed conditions and altered flow regimes and temperatures in streams and rivers due to dams
- Habitat loss or degradation due to climate change or other stochastic events.

Dams and diversions may contribute to aquatic habitat alteration by blocking aquatic fish movement or migration and may contribute to species isolation (Moyle et al. 2015). In addition, dams and diversions can alter water quantity, stream morphology, and water temperatures. Dams and diversions on and around both Forests have impacts on watershed conditions within the

Forests. While controlling impacts from dams and hydroelectric use is beyond Forest control, ecosystem-level plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.

The Sequoia Forest manages the lands around Lake Isabella. Four hydroelectric projects are located on the Kern River. These hydroelectric projects are run off of the rivers and influence the connectivity of flows. Lake Isabella is a reservoir that was created by the earthen Isabella Dam that alters connectivity of habitat for native warm water species, alters timing and temperature of flows in the river, and is a point of introduction for non-natives into the river systems (United States Department of Agriculture 2013a).

Native fish species in the Lower Kern River are influenced by Isabella Reservoir releases. Warm water native fishes are still present in the lower Kern River due to the clean, sediment free water that flows through the Lower Kern Canyon.

Stream morphology and temperatures may be affected by hydroelectric use on the Sierra National Forest. There are 50 dams and diversions on the Sierra National Forest, which affect flow over approximately 220 miles of streams. Dams and diversions may contribute to aquatic habitat alteration by blocking aquatic species movement or migration, and may contribute to species isolation (Moyle et al. 2015).

Impacts from changes in climate, such as extended drought, has further decreased water in the river. Warming temperatures can also influence quality of habitat. In addition, limited dispersal ability of this species and fragmented populations due to low head dams put it at further risk for localized extinctions. Although the Forest Service cannot control for these impacts, maintaining or improving watershed conditions would increase existing habitat resilience and the capability of these areas to support populations.

Sequoia – Central Valley Hitch

Information on Current Distribution of the Species in the Sequoia Planning Unit

Central valley hitch does occur on the Sequoia National Forest in the lower Kern River near Lake Isabella (Santos et al. 2014); population numbers and trend are not known. Much of the historic habitat for this species was to the north outside of the plan area.

Key Ecological Conditions in Sequoia Plan Area

Key ecological conditions for this species include warm, lowland, waters, clear streams, turbid sloughs, lakes and reservoirs.

Sequoia – Summary

The abundance and distribution of the Central Valley hitch is poorly documented, although evidence suggests that they are much less abundant than they were historically. Their distribution is also fragmented, with largely isolated populations scattered among various streams, lakes, and reservoirs. The biggest threats to this species on the Sequoia National Forest are the loss of water quality and quantity due to Lake Isabella Reservoir water management, and hydroelectric use. These factors combined with direct mortality due to predation, recreation use, stochastic events and climate change that affect water temperatures, put the Central Valley hitch at significant risk. Ecosystem-level components to manage invasive species, improve riparian ecosystems, and protect at-risk species would alleviate but not fully eliminate threats to this species. However, as

the species current abundance and distribution is unknown and water use associated with hydroelectric dams is beyond Forest control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Central Valley Hitch within the plan area. Nonetheless, ecosystem-level components would help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Sierra – Central Valley Hitch

Information on Current Distribution of the Species in the Sierra Planning Unit

On the Sierra National Forest, Central Valley hitch occurs at Bass Lake to Millerton Reservoir (Santos et al. 2014), however, population numbers and full range extent are not known.

Key Ecological Conditions in Sierra Plan Area

Key ecological conditions for this species include warm, lowland, waters, clear streams, turbid sloughs, lakes and reservoirs

Sierra – Summary

The biggest threats to this species on the Sierra National Forest are the loss of water quality and quantity due to hydroelectric use. Their distribution is also fragmented, with largely isolated populations scattered among various streams, lakes, and reservoirs. These factors combined with direct mortality due to predation, recreation use, stochastic events and climate change that affect water temperatures, put the Central Valley hitch at significant risk. Given that the species current abundance and distribution is unknown and water use associated with hydroelectric dams is beyond Forest control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Central Valley Hitch within the plan area. Nonetheless, ecosystem-level components would help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Hardhead – Sequoia/Sierra

Determination: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the hardhead in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

General Key Ecological Conditions: Hardhead are typically found in small to large streams in a low to mid-elevation environment. Hardhead may also inhabit lakes or reservoirs. Within a stream, hardhead tend to prefer warmer temperatures.

Table D-29. Key Threats, Plan Components and Expected Effects on Hardhead

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Competition and predation from invasive species	(Reference Crosswalk for Susceptible to Invasive Species)	Ecosystem-level components would minimize the occurrence and spread of invasive species, and thus will reduce threats to the hardhead.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss and changes in water quantity or quality due to forest management activities; Fragmented watershed conditions and altered flow regimes and temperatures in streams and rivers due to dams	(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Open Water Dependent)	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining fish populations. Control of impacts from dams and hydroelectric use is beyond Forest control, but plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality
Small population size and limited distribution.	(Reference Crosswalk for Special Habitats and Limited Distributions)	The Forest Service cannot directly control the effects of small populations size; however, ecosystem-level components designed to improve habitat conditions would make existing populations more resilient.

Key Threats to Persistence

The main threats to this species are small populations, fragmented watershed conditions due to dams, altered flow regimes and temperatures in streams, habitat loss, habitat diversion, decline in water quality, and invasive species.

Threats under Forest Service Control

- Habitat loss, habitat diversion, and decline in water quality due to forest management activities
- Invasive species

Predation by non-native, introduced fishes such as smallmouth bass is a major threat to this species, as non-native fishes have been introduced or have invaded most waters of the range. These waters include extensive areas that were once fishless at high elevations. Sierra Nevada fisheries have largely shifted from native fishes, especially salmon and other migratory fishes, to introduced fishes (United States Department of Agriculture 2013a, b). Additionally, predation from introduced American bullfrogs likely impact this species. The proposed action to *Maintain the native-fish-only status of Little Kern River and upper North Fork Kern River through*

remedial actions to remove invasive species, increase public education, provide signage, and provide law enforcement along with ecosystem-level components that emphasize controlling current invasive species and preventing their spread would help to reduce this threat.

Activities that reduce water flow or degrade water quality may impact this species. Existing conditions of habitat and fisheries on both Forests have been influenced by a variety of drivers, including recreation and grazing. Ecosystem-level components to reduce impacts of forest management activities to riparian areas would prevent further degradation. Ecosystem-level components for watersheds, waterbodies and aquatic and riparian areas would ensure habitat conditions, including water quantity and quality, are fully functioning and support self-sustaining populations.

Threats Not Under Forest Service Control

- Small populations and limited distribution
- Fragmented watershed conditions and altered flow regimes and temperatures in streams due to dams

Stream morphology and temperatures and water quantity may be affected by dams on or off Forest lands. Water impoundments, which block fish access to streams, together with degraded conditions above dams, lead to habitat loss and changes in the aquatic food chain. While controlling impacts from dams and hydroelectric use is beyond Forest control, ecosystem-level plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.

Four hydroelectric projects are located on the Kern River. These hydroelectric projects are run off of the rivers, and do not influence timing of flows of the rivers. Outside the forest, Pine Flat Reservoir eliminates connectivity of habitat for native cool water species, Lake Isabella, is on the forest but not managed by the Forest Service, was built on top of previous habitat for this species, blocks connectivity, and have introduced non-natives into the river systems (United States Department of Agriculture 2013b).

Hardhead are still fairly widespread in the foothill streams, but their specialized habitat requirements, combined with widespread alteration of downstream habitats, has resulted in most populations being localized and isolated and more vulnerable to localized extinctions (Moyle 2002). Although the Forest Service cannot control for these impacts, maintaining or improving watershed conditions would increase existing the capability of these areas to support populations and the resilience of existing populations.

Stream morphology and temperatures may be affected by hydroelectric use on the Sierra National Forest. There are 50 dams and diversions on the Sierra National Forest, which affect flow over approximately 220 miles of streams. Dams and diversions may contribute to aquatic habitat alteration by blocking aquatic species movement or migration, and may contribute to species isolation.

Major dams and associated reservoirs are located nearby or on the Sequoia National Forest, on the Kings and Kern Rivers, which block the movement of cool water native fishes. Smaller dams and diversions that are run off of the river facilities on the Kern River block the movement of this species, as it is not a good jumper over low-head dams, and have encouraged conditions for bass, a predatory non-native species. These water impoundments, which block fish access to streams,

together with degraded conditions above dams, have led to loss of about 90 percent of the historic habitat in the Sierra Nevada. Local degradation of habitats has led to significant impacts on aquatic invertebrates, which make up the vast majority of aquatic species in the Sierra Nevada. Impacts to invertebrates have significant cascading effects on the food chain, carbon pathways, and energy pathways in the aquatic ecosystem. Predation by bass, a non-native fish, significantly degrades habitat for this the hardhead.

Sequoia – Hardhead

Information on Current Distribution of the Species in the Sequoia Planning Unit

Within the Sequoia National Forest plan area this species is found in the lower Kings River and lower Kern River (Moyle et al. 2015).

Key Ecological Conditions in Sequoia Plan Area

Small to large streams in a low to mid-elevation environment; clear deep streams with a slow but present flow; occasionally clean cool lakes or reservoirs; and gravel and rocky substrate for spawning. These are the areas with hydroelectric projects such as the dam at Lake Isabella. While their historic habitats are widely altered by large, mid-elevation reservoirs that isolate populations, hardhead are able to use these habitats provided they are not heavily invaded by non-native predatory fishes such as bass.

Sequoia – Summary

The abundance and distribution of the hardhead is relatively well documented, and evidence suggests that they are much less abundant than they were historically. Their distribution is also fragmented, with largely isolated populations scattered among various streams, lakes, and reservoirs on the Sequoia National Forest and throughout the range. The biggest threats to this species on the Sequoia National Forest are the loss of water quality and quantity due to hydroelectric use. These factors combined with direct mortality due to predation, recreation use, stochastic events and climate change that affect water temperatures, put the hardhead at significant risk. Although the Forest cannot control water use associated with hydroelectric dams, plan components to maintain aquatic ecosystem integrity, control invasive species, and reduce impacts of forest management activities to aquatic habitats would maintain or improve conditions for the species. It is within the inherent capability of the plan areas to maintain or restore the ecological conditions to maintain a viable population of the hardhead in the plan areas. Ecosystem-level plan components should maintain or restore ecological conditions within the plan areas to contribute to maintaining a viable population of the species within its range. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Sierra – Hardhead

Information on Current Distribution of the Species in the Sierra Planning Unit

This species occurs on the San Joaquin River, Willow Creek, and Kings River, with the only stable population located within a stream reach between two dams that provide stable aquatic conditions and protections from non-native fish predators, such as sunfish and bass.

Key Ecological Conditions in Sierra Plan Area

Key ecological conditions for this species include small to large streams in a low to mid-elevation environment; clear deep streams with a slow but present flow; occasionally clean cool lakes or reservoirs; and gravel and rocky substrate for spawning.

Sierra – Summary

The abundance and distribution of the hardhead minnow hitch is relatively well documented, and evidence suggests that they are much less abundant than they were historically. Their distribution is also fragmented, with largely isolated populations scattered among various streams, lakes, and reservoirs on Forest. The biggest threats to this species on the Sierra National Forest are the loss of water quality and quantity due to hydroelectric use. These factors combined with direct mortality due to predation, recreation use, and stochastic events put the hardhead minnow at significant risk. Although the Forest cannot control water use associated with hydroelectric dams, plan components to maintain aquatic ecosystem integrity, control invasive species, and reduce impacts of forest management activities to aquatic habitats would maintain or improve conditions for the species. Ecosystem-level plan components should maintain or restore ecological conditions within the plan areas to contribute to maintaining a viable population of the species within its range. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Kern River rainbow trout – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Kern River rainbow trout in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Key ecological conditions for Kern River rainbow trout include sufficient water quality and quantity, which includes cold water less than 24 degrees Celsius, with pooling habitat, undercut banks, and emergent vegetation. Connectivity of habitat is required with no non-native trout present.

Table D-30. Key Threats, Plan Components and Expected Effects on Kern River Rainbow Trout

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Hybridization with rainbow trout; Competition and predation from non-native trout	<i>(Reference Crosswalk for Susceptible to Invasive Species)</i>	Ecosystem-level components would minimize the occurrence and spread of Rainbow trout or non-native trout to the extent possible, and thus would reduce threats to the Kern River rainbow trout.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation from forest management activities including grazing and recreation	(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Open Water Dependent)	Ecosystem-level direction for water, watersheds, aquatic, and riparian areas emphasize conservation, maintenance, and restoration of aquatic and riparian ecosystem integrity, which would help restore previous damage from grazing. Ecosystem-level components for grazing and recreation avoid or limit disturbance to riparian areas and sensitive species. Together, these plan components would reduce the threat of fish habitat degradation, and may even improve previously impaired conditions.
Recreational fishing	Desired Condition (SPEC-FW-DC) 04 Habitat for nonnative fish and game species is managed in locations and ways that do not pose substantial risk to native species, while still contributing to economies of local communities Goal (SPEC-GT-GOAL) 01 Continue to coordinate and collaborate with CDFW to implement and renew the California Golden Trout Conservation Assessment and Strategy.	The threat of overfishing is addressed by the Conservation Assessment and Strategy for the California Golden Trout which would also benefit Kern River rainbow trout.
Limited distribution	(Reference Crosswalk for Special Habitats and Limited Distributions)	The Forest Service cannot directly control the effects of a limited distribution; however, ecosystem-level components designed to improve conditions in existing habitat would increase the capability of these areas to support populations
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Hybridization with coastal rainbow trout. In plan area, competition and predation from non-native trout, grazing, recreation, limited distribution, and climate change.

Threats under Forest Service Control

- Competition and predation from non-native trout
- Habitat degradation due to forest management activities

The primary threats to remaining populations of Kern River rainbow trout include past hybridization with hatchery rainbow trout, and further introductions of hatchery rainbow, brown, or brook trout by anglers into small isolated streams. The proposed action to *Maintain the native-fish-only status of Little Kern River and upper North Fork Kern River through remedial actions to*

remove invasive species, increase public education, provide signage, and provide law enforcement along with ecosystem-level components that emphasize controlling current invasive species and preventing their spread would help to reduce this threat.

Continued grazing in riparian areas and heavy recreational use of the basin, including angling, can degrade the trout's fragile habitat. Ecosystem-level components to reduce impacts of forest management activities to riparian areas would prevent further degradation. Generally, livestock impacts from overgrazing include a reduction in deep water habitats, detrimental sedimentation, reduced stream shading, loss of instream and riparian cover, and alterations in food resources; however, current cattle management on the forest focuses on restoring the hydrologic and vegetative function of meadows in trout habitat. Managing grazing to reduce impacts to riparian areas would prevent further degradation. Forest-wide components would ensure watershed conditions are fully functioning and support self-sustaining populations. Recreation uses, which can also degrade habitat conditions, are expected to continue. Ecosystem-level components for watersheds, waterbodies and aquatic and riparian areas would ensure habitat conditions, including water quantity and quality, are fully functioning and support self-sustaining populations.

Threats Not Under Forest Service Control

- Limited distribution
- Habitat loss or degradation due to climate change or other stochastic events

As a result of its rarity and limited distribution, this species is highly susceptible to stochastic events and drying conditions that may result from increasing temperatures and other climate change related disturbance in the future. Its isolated populations put it at further risk for localized extinctions. Random natural events, such as floods, drought, and fire, can also exacerbate problems associated with habitat degradation (Trout 2017), especially in combination with rain-on-snow flooding associated with climate change (Herbst and Cooper 2010). Although the Forest Service cannot control for these impacts, maintaining or improving watershed conditions would increase existing habitat resilience and the capability of these areas to support populations.

Information on Current Distribution of the Species in the Planning Unit

The Kern River rainbow trout is a subspecies endemic to the Kern River and tributaries in Tulare County and occurs on the Sequoia National Forest plan area (Moyle et al. 2015). Most populations in the section of the North Fork Kern River from Johnsondale to Fork of the Kern are of mixed genetic origin. However, a number of populations in the upper Kern River basin still largely represent the native genotype, and these are on the Sequoia National Park (Erickson 2013).

Key Ecological Conditions in Plan Area

Key ecological conditions for Kern River rainbow trout include sufficient water quality and quantity, which includes cold water less than 24 degrees Celsius, with pooling habitat, undercut banks, and emergent vegetation. Connectivity of habitat is required with no non-native trout present.

On the Sequoia National Forest, the watersheds in areas where native trout should be able to persist are generally in the "functioning at-risk" category. Little competition for water uses exists above Johnsondale on the North Fork Kern River on the Sequoia National Forest. This species

requires cold water which is influenced by warming nighttime temperatures and prolonged drought.

Sequoia – Summary

The Kern River rainbow trout is an endemic fish species, restricted to the Kern River system and occurs on the Sequoia National Forest. There is substantial concern for the species persistence due to its rarity coupled with the potential for genetic introgression and competition from non-native fish species. Uncertainty with regard to climate change related effects poses an additional longer-term threat. As a result of its rarity and limited distribution, this species is highly susceptible to stochastic events and drying conditions that may result from increasing temperatures and other climate change related disturbance in the future. Its isolated populations put it at further risk for localized extinctions. Daily maximum temperatures currently approach the upper thermal limit commonly recognized for rainbow trout (Nussle, Matthews, and Carlson 2015), and water temperatures are predicted to increase. Several main threats, including increasing water temperatures due to climate change, are outside of Forest Service control. Given that main threats are outside of Forest control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Kern River rainbow trout within the plan area. Nonetheless, ecosystem-level components should help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Kern Brook Lamprey – Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Kern Brook lamprey in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Cool lowland waters, clear streams and silty backwaters of large rivers.

Key Threats to Persistence

Main threats are fragmented watershed conditions due to dams, altered flow regimes and temperatures in streams and rivers for hydroelectric power, agriculture and mining activities; changes in water quantity or quality; habitat loss, competition and predation from invasive species, drought and climate change.

Threats under Forest Service Control

- Habitat loss and changes in water quantity or quality due to forest management activities
- Competition and predation from invasive species

Lampreys are greatly affected by loss of wetlands, side channels, back eddies, and beaver ponds. Channelization, floodplain filling, and destruction of riparian vegetation is widespread in low-gradient stream areas favored by lamprey for spawning and rearing. River channelization negatively impacts larval lamprey habitat by increasing stream velocity, thereby reducing depositional areas favored by larval lamprey (Close, M.S., and Li 2002, Close, Fitzpatrick, and Li 2002). High stream temperatures resulting from the destruction of riparian vegetation are a likely

Table D-31. Key Threats, Plan Components and Expected Effects on Kern Brook Lamprey

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Competition and predation from invasive species	<i>(Reference Crosswalk for Susceptible to Invasive Species)</i>	Ecosystem-level components would minimize the occurrence and spread of non-native fish, and thus will reduce threats to the Kern Brook lamprey.
Habitat loss and changes in water quantity or quality due to forest management activities; Fragmented watershed conditions and altered flow regimes and temperatures in streams and rivers due to dams	<i>(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Open Water Dependent)</i>	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining fish populations. Control of impacts from dams and hydroelectric use is beyond Forest control, but plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.
Habitat loss or degradation due to climate change or stochastic events	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

limiting factor because lampreys prefer temperatures below 20 degrees Celsius (BioAnalysts 2000). Forest management activities such as grazing and recreation may contribute to these habitat alterations. Generally, livestock impacts from overgrazing include a reduction in deep water habitats, detrimental sedimentation, reduced stream shading, loss of instream and riparian cover, and alterations in food resources; however, current cattle management on the forest focuses on restoring the hydrologic and vegetative function of riparian habitat. Ecosystem-level plan components related to grazing would reduce impacts to riparian areas and prevent further degradation. Water plays a major role in providing a diverse set of recreation opportunities on the Sierra National Forest, and recreation use may also pose a risk to the Kern brook lamprey and its habitat. Most areas that are accessible to camping or off-road vehicles and other use may affect ammocoetes habitat or disrupt spawning (Santos et al. 2014). Ecosystem-level components for aquatic and riparian ecosystems would reduce impacts from recreation ensure watershed conditions are fully functioning and support self-sustaining populations.

Predation by non-native, introduced fishes, such as smallmouth bass, is a major threat to this species. Non-native fishes have been introduced or have invaded most waters of the range. These waters include extensive areas that were once fishless at high elevations. Sierra Nevada fisheries have largely shifted from native fishes, especially salmon and other migratory fishes, to

introduced fishes (United States Department of Agriculture 2013b). The actual impact from these threats on population trends of Kern brook lamprey is not known. The proposed action to *Maintain the native-fish-only status of Little Kern River and upper North Fork Kern River through remedial actions to remove invasive species, increase public education, provide signage, and provide law enforcement* along with ecosystem-level components that emphasize controlling current invasive species and preventing their spread would help to reduce this threat.

Threats Not Under Forest Service Control

- Fragmented watershed conditions and altered flow regimes and temperatures in streams and rivers due to dams
- Habitat loss or degradation due to climate change or other stochastic events

Dams and diversions may cause aquatic habitat alteration by blocking aquatic species movement or migration and may contribute to species isolation (Moyle et al. 2015). In addition, dams and diversions can alter water quantity, stream morphology, and water temperatures. Limited dispersal ability of this species and fragmented populations due to dams put it at-risk for localized extinctions. Similar to dams, culverts that pass adult salmonids are often barriers to lamprey. A systematic survey of lamprey in the Alsea Basin, Oregon found lampreys were often absent above road culverts (Kostow 2002). Stream diversions can kill juvenile and adult lamprey by stranding due to artificial lowering of the water level, or because the diversions are unscreened, or the lamprey can get under or through the screens (BioAnalysts 2000, Kostow 2002). (Kostow 2002) reports that most lamprey die after passing through dredges. While controlling impacts from dams and hydroelectric use is beyond Forest control, ecosystem-level plan components to maintain adequate timing and quantity of water flows and sustain water quality would help mitigate effects.

Water quantity and quality, including stream morphology and temperatures, may be affected in the future as hydroelectric use continues and increases. The Forest completed a Settlement Agreement with Southern California Edison in 2008 regarding future operations of several of its hydroelectric facilities. Among the conditions on the new licenses would be increases in minimum instream flow, along with channel and riparian maintenance flows. Increases in flow would augment the amount of habitat available, and possibly reduce water temperatures in some stream segments, providing additional cold-water habitat.

Climate predictions for the Central Valley and the southern Sierra Nevada include increased warming, less snowpack, and earlier spring snowmelt. These changes would influence the amount of water supply that can originate from forest lands and from precipitation, and warming temperatures can further limit distributions of native fishes, other aquatic dependent species like Kern Brook lamprey (United States Department of Agriculture 2013b), (Santos et al. 2014).

Although the Forest Service cannot control for these impacts, maintaining or improving watershed conditions would increase existing habitat resilience and the capability of these areas to support populations.

Information on Current Distribution of the Species in the Planning Unit

The Kern brook lamprey occurs in the Kings, Merced and San Joaquin River systems on the Sierra National Forest in extremely isolated population segments.

Key Ecological Conditions in Plan Area

Key ecological conditions for this species include cool lowland waters, clear streams and silty backwaters of large rivers.

Sierra – Summary

The abundance and distribution of the Kern brook lamprey is relatively well documented, and evidence suggests that they are much less abundant than they were historically. Their distribution is also fragmented, with largely isolated populations scattered among several river systems on the Sierra National Forest and throughout the range. The biggest threats to this species on the Sierra National Forest are the loss of connectivity and water quality and quantity due to hydroelectric use. These factors combined with direct mortality due to predation, recreation use, along with stochastic events and climate change that affect water temperatures, put the Kern brook lamprey at significant risk. Given that the main threat to this species, i.e., water use for dams, is outside of Forest Service control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of Kern brook lamprey within the plan area. Nonetheless, ecosystem-level components should help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Terrestrial Invertebrates

Behr's Metalmark – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Behr's metalmark in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Shrub, chaparral, woodland and mixed forest habitats. Several kinds of arid habitats occupied by stands of suitable caterpillar host plants, primarily fasciculate buckwheat (*Eriogonum fasciculatum*), but also Wright's buckwheat (*E. wrightii*), in open mixed deciduous conifer forest.

Table D-32. Key Threats, Plan Components and Expected Effects on Behr's Metalmark

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat degradation due to invasive species	<i>(Reference Crosswalk for Susceptible to Invasive Species and Special Habitats and Limited Distributions)</i>	Ecosystem-level plan components would minimize the occurrence and spread of invasive species, and thus reduce threats to the Behr's metalmark. Desired conditions for terrestrial vegetation would move habitats towards natural range of variation.

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation from forest management activities including grazing and recreation	(Reference Crosswalk for Susceptible to Stochastic Events)	Ecosystem-level direction for water, watersheds, aquatic, and riparian areas emphasize conservation, maintenance, and restoration of aquatic and riparian ecosystem integrity, which will help restore previous damage from grazing. Ecosystem-level components for grazing and recreation avoid or limit disturbance to riparian areas and sensitive species. Together, these plan components would reduce the threat of butterfly habitat degradation, and may even improve previously impaired conditions.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Habitat loss due to urbanization at lower elevations, invasive species, conifer encroachment, climate change, and fire events.

Threats under Forest Service Control

- Invasive plant species

Cheatgrass in lower elevation areas may threaten the buckwheat host plants for this species. This would reduce connectivity of habitat up the Kern canyon and into the Southern Greenhorn Mountains.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

Drying of the habitat from drought may eliminate the host species required for this species. Drought can reduce numbers of butterflies substantially (Ehrlich and Murphy 1987). Warming temperatures can advance the timing of spring flight of butterflies (Forister et al. 2010); the risk is that host plant phenology will not develop at the same rate; causing a decline in the species. Loss of habitat at lower elevations, due to climate change and habitat destruction puts the species at-risk. Habitat destruction and shifting climatic regimes put this species at-risk. Increasingly warm temperatures along with cheatgrass invasions may contribute to wildfires occurring more frequently.

The biology of this species contributes to the species' vulnerability as this species is narrowly endemic and is a habitat specialist, relying only on a few species of buckwheat for forage. Stochastic events within the narrow range of this species could adversely impact populations.

Information on Current Distribution of the Species in the Planning Unit

Behr's metalmark is a rare species known from the southern Sierra Nevada. A 1964 collection of subspecies from Sequoia National Forest was verified by Davenport in 2009. The subspecies is found along the Kern River in Tulare County and extends into the Southern Greenhorn Mountains, and Piute Mountains in Kern County. It is found at elevations between 4,000 to 6,000 feet (Davenport 2004, Davenport 2016).

Distribution is reported as: "Very spotty and local, but often common where found. In Kern County Behr's metalmark has populations south of Lamont Peak (Chimney Peak Road at the south end of Kern Plateau), on the east side of the Greenhorns, both west and east slopes of the Piutes (South of Bodfish and Piute Mountain Rd.), west of Sageland/Kelso Valley, Walker Pass south (including Bird Spring Pass) to Butterbrecht Peak and Kelso Valley. It ranges at least as far southwest as Sand Canyon in the Tehachapi's. In Tulare County, it occurs along upper Kern River (Calkin's Flat) up Sherman Pass Rd. to about 5,000 feet, and in Lamont Peak area at south end of Kern Plateau area along Chimney Peak Road" (Davenport 2014).

Key Ecological Conditions in Plan Area

Key ecological conditions for this species in the plan area include arid woodlands supporting buckwheat between 4,000 and 6,000 feet. Fasciculate buckwheat is found throughout the area near Lake Isabella, and the Southern Greenhorns. Wright's Buckwheat is found up in the Kern Canyon and the Greenhorn Mountains.

Sequoia – Summary

This butterfly is rare and localized, known from relatively few populations in the Greenhorn and Piute Mountains. Habitat is threatened by invasive species, warming temperatures, drought, and other disturbance. It is unknown if a current viable population exists within the Sequoia National Forest planning area and therefore, it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Behr's metalmark in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Evius Blue – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Evius blue in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Key ecological conditions include forest clearings and edges, prairie, sagebrush, chaparral, coastal dunes, fields with lupines.

Table D-33. Key Threats, Plan Components and Expected Effects on Evius Blue

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat degradation due to invasive species	<i>(Reference Crosswalk for Susceptible to Invasive Species and Special Habitats and Limited Distributions)</i>	Ecosystem-level plan components will minimize the occurrence and spread of invasive species, and thus will reduce threats to Evius blue. Desired conditions for terrestrial vegetation will move habitats towards natural range of variation.
Habitat loss or degradation from forest management activities including grazing and recreation	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	Ecosystem-level direction for water, watersheds, aquatic, and riparian areas emphasize conservation, maintenance, and restoration of aquatic and riparian ecosystem integrity, which will help restore previous damage from grazing. Ecosystem-level components for grazing and recreation avoid or limit disturbance to riparian areas and sensitive species. Together, these plan components will reduce the threat of habitat degradation, and may even improve previously impaired conditions for at-risk butterflies.
Habitat loss or degradation due to climate change or stochastic events	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions will aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Conifer encroachment of meadows, drought, and invasion of non-native grass may restrict this species along with overstocked stand conditions which lead to high fire severity. Climate changes such as warmer temperatures, less snowpack, earlier snowpack melting, and drought.

Threats under Forest Service Control

- Habitat loss or degradation due to forest management activities including grazing, vegetation treatments, and recreation
- Invasive plant species

Invasive plant species such as cheatgrass can increase the fire return interval in habitat for this species resulting in an altered vegetation community with a reduced capacity to support the forage needs of the Evisus blue. Conifer density may threaten the persistence of this specie due to increased risk of wildfire. Fire suppression over the past century has led to risk of extreme fires in some areas.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

Forest clearings, meadows, stream margins, and edges currently may be influenced by drought and warming temperatures. Warmer and dried conditions may contribute to wildfire. Climate changes such as warmer temperatures, less snowpack, earlier snowpack melting, and drought may influence butterfly emergence and flight timing, and numbers of generations per year. The flowering phenology responds to temperature increase and earlier snowmelt due to climate change. The long-term risk for this butterfly is that asynchronies in their host plant availability, and their emergence timing put this species at-risk (Dunne, Harte, and Taylor 2003).

Information on Current Distribution of the Species in the Planning Unit

Evisius blue is not recognized in NatureServe, although other subspecies of *P. icarioides* are recognized. Very little is known about this subspecies; the subspecies is generally distributed in montane areas of southern California, usually at intermediate elevations, and almost always closely associated with a lupine foodplant; occurring in Greenhorn, Piute and Tehachapi Mountains, Frazier Park, Mount Pinos, and Sageland-Kelso Valley (Davenport 2014).

Forest clearings, meadows, stream margins, and edges are abundant up on the southern Greenhorn Mountains, giving a longer season than the streams in the Piute Mountains. However, Erskine Creek is perennial and provides habitat for butterflies along its margins.

Key Ecological Conditions in Plan Area

Generally distributed in montane areas at intermediate elevations, and closely associated with a lupine foodplant. Forest clearings, meadows, stream margins, and edges with buckwheat and lupines present. Caterpillars feed on lupine leaves, then flowers and seedpods.

Sequoia – Summary

Evisius blue is at the northern end of its range on the Sequoia National Forest plan area; constrained to a small range with highly patchy distribution. As a result of its rarity and limited distribution, this species is highly susceptible to stochastic events and drying conditions that may result from increasing temperatures and other climate change related disturbance. Its isolated populations put it at further risk for localized extinctions. It is unknown if a current viable population exists within the planning area and therefore, it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Greenish Blue – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the greenish blue in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Wet meadows, riparian habitats, and open forests that support clovers.

Table D-34. Key Threats, Plan Components and Expected Effects on Greenish Blue

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat degradation due to invasive species and conifer encroachment of meadows	<i>(Reference Crosswalk for Susceptible to Invasive Species and Special Habitats and Limited Distributions)</i>	Ecosystem-level plan components would minimize the occurrence and spread of invasive species, and thus would reduce threats to greenish blue. Desired conditions for terrestrial vegetation would move habitats towards natural range of variation.
Habitat loss or degradation from forest management activities vegetation treatments and recreation	<i>(Reference Crosswalk for Susceptible to Stochastic Events and Riparian/Water Dependent, Wet/Riparian Meadow Dependent Seeps/Springs Dependent)</i>	Ecosystem-level direction for water, watersheds, aquatic, and riparian areas emphasize conservation, maintenance, and restoration of aquatic and riparian ecosystem integrity, which would help restore previous damage from grazing. Ecosystem-level components for grazing and recreation avoid or limit disturbance to riparian areas and sensitive species. Together, these plan components would reduce the threat of aquatic habitat degradation, and may even improve previously impaired conditions.
Habitat loss or degradation due to climate change or stochastic events	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Threats to persistence include habitat loss, conifer encroachment of meadows, climate change, wildfire, drought, and invasive non-native species.

Threats under Forest Service Control

- Habitat loss or degradation due to forest management activities
- Invasive plant species

Habitat loss from the degradation of wet meadows on the Kern Plateau may threaten the persistence of this subspecies. The spread of invasive plant species may degrade habitat as native plants which serve as food sources for greenish blue are outcompeted by invasive plant species.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

Climate changes such as warmer temperatures, less snowpack, earlier snowpack melting, and drought may influence butterfly emergence and flight timing, and numbers of generations per year. The flowering phenology of host plants may respond to temperature increase and earlier

snowmelt due to climate change. The long-term outlook for this butterfly is that asynchronies in their host plant availability (Dunne, Harte, and Taylor 2003), and their emergence timing put this species at-risk. Wildfire may also become more frequent as a result of climate change and historical fire suppression which has led to overstocked stands.

Information on Current Distribution of the Species in the Planning Unit

Occurrences of *Plebejus saepiolus* have been documented in Kern, Madera, Mono, Tulare, and Tuolumne Counties. The type specimen is from Tioga Pass, Mono County. Distribution records for Kern and Tulare Counties include collected material from Sequoia-Kings Canyon National Parks that is probably not a typical *P. saepiolus* ssp. *aehaja* (Davenport 2014). From there this subspecies ranges south in wet meadows and riparian streambed habitats to the south end of the Kern Plateau at Pine Flat, the Greenhorn Mountains south to Black Mountain saddle and isolated points in the Piute Mountains. Some individuals from populations (as at Marshall Meadow in the Greenhorns and at the south end of the Kern Plateau) are very large and suggestive of southern California subspecies *P. saepiolus* ssp. *hilda*.

There are more than 20 occurrence records for Kern and Tulare Counties. Several occurrences are within the boundaries of Sequoia National Forest plan area, including in the Piute Mountains, Greenhorn Mountains, Sherman Pass area, Big Meadow and Pine Flat (Davenport 2014). However, a large sized population may be a different subspecies and it is unknown if the plan area supports an existing viable population without further studies. Several records have repeated sightings for different years.

Key Ecological Conditions in Plan Area

Key ecological conditions consist of wet meadows and riparian streambed habitats. Caterpillars and adults feed on clovers of the genus *Trifolium*.

Sequoia – Summary

Greenish blue is an endemic butterfly subspecies of California. As a result of its rarity, limited distribution, and difficulty to identify, this subspecies is highly susceptible to stochastic events and drying conditions that may result from increasing temperatures and other climate change related disturbance in the future. It is unknown if a current viable population exists within the planning area and therefore, it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Indian Yosemite Snail – Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Indian Yosemite snail in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Key ecological conditions for this species include mossy limestone crevices and talus, typically on steep slopes where moisture and high humidity are retained. Caves and abandoned mines may also provide these ecological conditions.

Table D-35. Key Threats, Plan Components and Expected Effects on Indian Yosemite Snail

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or disturbance due to recreation or mining	<i>(Reference Crosswalk for Disturb Intolerant)</i>	Ecosystem-level plan components would protect sensitive habitats, including caves and mines, and manage recreation opportunities to limit disturbance to sensitive species such as Indian Yosemite snail.
Degradation or loss of habitat and microsite conditions due to forest management activities	<i>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</i>	Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species. Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats, including snail microsite habitat, when possible.
Habitat loss or degradation due to climate change or stochastic events	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, and climate change.

Key Threats to Persistence

Disturbance, degradation or loss of habitat to microsite conditions due to recreation or mining activities. Loss of habitat due to fire, drought conditions, and climate change.

Threats under Forest Service Control

- Habitat loss and degradation due to construction, vegetation treatments, wildfire fuels reduction, timber harvest, and recreation.

Habitat alteration from forest management activities can threaten this sedentary species. Habitat alteration such as development for mining, road widening, or construction and limestone quarrying likely pose the greatest threat to this species. As few studies have investigated this species, additional research needs to be conducted to determine what threats are most significant for this species. In addition, habitat can be impacted by invasive plant species, habitat fragmentation, surface mining, intensive grazing, illegal marijuana cultivation, and climate change.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

As with other species with a limited range, stochastic events are a significant threat to the persistence of this species. Events such as fire, flood, drought, habitat alteration or climate change can significantly impact a restricted range animal. Connectivity of habitat is important because this species has minimal movement capability and is restricted to limited times of the year for movement.

As fire severity and intervals increase, degradation, connectivity and loss of habitat for this species will also increase. Since land snails have limited mobility, poor active dispersal ability, and are very sensitive to desiccation, they are highly vulnerable to fire itself and to subsequent habitat destruction (Burke 1999). In consequence, post-fire return of this group is expected to be slow. According to (Burke 1999), intense fire events can result in the persistence of only a small fraction of mollusk fauna for many years (possibly a century or more). Less-severe fires leaving numerous large, minimally charred logs in the stand result in a greater portion of mollusk survival (Burke 1999).

Warming temperatures and longer droughts associated with climate change is expected. This change would intensify trends in fire, insect and disease outbreaks, and drought-related tree mortality. As a result, microsite conditions on rocky steep slopes that include high humidity and moisture would be impacted (United States Department of Agriculture 2013b).

Information on Current Distribution of the Species in the Planning Unit

This species is found only in Mariposa County, at the boundary of Yosemite National Park and Sierra National Forest, along the Merced River near the South Fork confluence. There are 7 occurrences recorded in CNDDb, with 2 occurrences on the Sierra National Forest: one along the Merced River about a mile from the confluence with the South Fork of the Merced River; and the other along the South Fork of the Merced River about a quarter mile from Hite Cove.

Key Ecological Conditions in Plan Area

Key ecological conditions for this species include mossy limestone crevices and talus, typically on steep slopes where moisture and high humidity are retained. Caves and abandoned mines may also provide these ecological conditions.

Sierra – Summary

The Indian Yosemite snail is restricted to limestone and rocky outcrop habitat on the Sierra National Forest. The biggest threats to this species on the Sierra National Forest are degradation or loss of habitat from ground disturbing activities, such as mining, heavy recreation use and drought. These factors combined with direct mortality due to predation, increased stochastic fire events of high intensity, along with climate change, puts the Indian Yosemite snail at significant risk. As a result of its rarity and limited distribution it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Merced Canyon Shoulderband – Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Merced Canyon shoulderband in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Table D-36. Key Threats, Plan Components and Expected Effects on Merced Canyon Shoulderband

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or disturbance due to recreation or mining	<i>(Reference Crosswalk for Disturb Intolerant)</i>	Ecosystem-level plan components would protect sensitive habitats, including caves and mines, and manage recreation opportunities to limit disturbance to sensitive species such as Merced Canyon shoulderband.
Degradation or loss of habitat and microsite conditions due to forest management activities	<i>(Reference Crosswalk for Susceptible to Stochastic Events and Special Habitats and Limited Distributions)</i>	Desired conditions for wildlife habitat include maintaining adequate habitat features for at-risk species. Ecosystem-level guidelines for fire management and recreation would minimize disturbance to special habitats when possible.
Habitat loss or degradation due to climate change or stochastic events	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

General Key Ecological Conditions: Key ecological conditions for this species include talus deposits and outcrops, typically on steep slopes where moisture and high humidity are retained. Other ecological conditions include rocks, logs, vegetation, leaf litter and woody debris in forest habitats.

Key Threats to Persistence

Disturbance, degradation or loss of habitat to microsite conditions due to recreation or mining activities. Loss of habitat due to high-intensity fire, drought conditions and climate change.

Threats under Forest Service Control

- Habitat loss and degradation due to construction, vegetation treatments, wildfire fuels reduction, timber harvest, and recreation.

Road construction and maintenance can adversely impact the rock habitat for this species. Heavy recreation use may also impact habitat for this species.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

As with other species with a limited range, stochastic events are a significant threat to the persistence of this species. Events such as fire, flood, habitat alteration, or climate change can significantly impact a limited range animal. Connectivity of habitat is important because this species has limited movement capability and is restricted to limited times of the year for movement. The degree of connectivity for dispersal within and between occupied areas depends

on the density and arrangement of shaded down wood and other cover objects which provide daily refugia during the wet season (Jordan and Black 2015). As fire severity and intervals increase, degradation and loss of habitat for this species will also increase.

Since land snails have limited mobility, poor active dispersal ability, and are very sensitive to desiccation, they are highly vulnerable to fire itself and to subsequent habitat destruction (Burke 1999). In consequence, post-fire return of this group is expected to be slow. Intense fire events can result in the persistence of only a small fraction of mollusk fauna for many years (possibly a century or more). Less-severe fires leaving numerous large, minimally charred logs in the stand result in a greater portion of mollusk survival (Burke 1999).

Warming temperatures and longer droughts associated with climate change is expected. This change will intensify trends in fire, insect and disease outbreaks, and drought-related tree mortality. As a result, microsite conditions on rocky steep slopes that include high humidity and moisture will be impacted (United States Department of Agriculture 2013b).

Information on Current Distribution of the Species in the Planning Unit

This species is found on the Sierra National Forest in the Merced Canyon area, just south of Portal. Four locations are recorded in CNDDB.

Mollusks which inhabit rocky habitats also utilize the surrounding forest areas for foraging and dispersal during moist, cool conditions. Seasonal deep refugia include talus deposits and outcrops, are used for up to half the year (Jordan and Black 2015). These seasonal refugia also provide protection from fire and predation during inactive periods (Duncan 2005).

Key Ecological Conditions in Plan Area

The Merced Canyon shoulderband occurs on talus deposits, outcrops and steep slopes where moisture and high humidity are retained on the western foothills of the Sierra Nevada. Forested and woodland habitat with rocks, logs and woody debris are also preferred habitat. This area experiences dry, xeric conditions with less than six inches precipitation annually and as a result, limited moisture that is available is essential for respiration and often hatching of eggs. This species has very little capability to disperse and even relatively small barriers are limiting.

Sierra – Summary

The Merced Canyon shoulderband is primarily restricted to rocky outcrop habitat on the Merced River within Sierra National Forest. The biggest threats to this species on the Sierra National Forest are degradation or loss of habitat from ground disturbing activities, such as mining, heavy recreation use, and drought. These factors combined with increased stochastic fire events of high intensity, along with climate change, puts the Merced Canyon shoulderband at significant risk. As a result of its rarity and limited distribution it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Tehachapi Fritillary – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the Tehachapi fritillary in the plan area. Nonetheless, the plan components should

maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Tehachapi fritillary occurs in mountains meadows, forest openings and rocky outcrops where the larval host plant species of *Viola* occur (Lotts and T. Naberhaus 2017), perhaps a subspecies of *Viola purpurea*.

Table D-37. Key Threats, Plan Components and Expected Effects on Tehachapi Fritillary

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat degradation due to invasive species	(Reference Crosswalk for Susceptible to Invasive Species and Special Habitats and Limited Distributions)	Ecosystem-level plan components would minimize the occurrence and spread of invasive species, and thus would reduce threats to the species. Desired conditions for terrestrial vegetation would move habitats towards natural range of variation.
Habitat loss or degradation from forest management activities including vegetation treatments and recreation	(Reference Crosswalk for Susceptible to Stochastic Events and Riparian/Water Dependent, Wet/Riparian Meadow Dependent Seeps/Springs Dependent)	Ecosystem-level direction for water, watersheds, aquatic, and riparian areas emphasize conservation, maintenance, and restoration of aquatic and riparian ecosystem integrity, which will help restore previous damage from grazing. Ecosystem-level components for grazing and recreation avoid or limit disturbance to riparian areas and sensitive species. Together, these plan components will reduce the threat of habitat degradation, and may even improve previously impaired conditions for fritillary.
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Habitat loss and degradation due to fire suppression and conifer encroachment, invasive annual grasses, grazing, loss of habitat from fire events, and climate change.

Threats under Forest Service Control

- Habitat loss and degradation due to forest management activities

The total area of meadows in the Sierra Nevada has decreased due to past and current land use practices such as dams, diversions, and recreation; upland vegetation encroachment from conifers and sagebrush as a result of fire suppression; or from drying due to stream channel incision (Gross and Coppoletta 2013).

Livestock grazing poses a risk to butterflies through removal of host plants, disturbance to larval phases, and spread of invasive species. Livestock grazing is likely to be sustained within the

planning area over the next 20 years. The amount of livestock grazing may decline to some degree due to reduced forage capacity and tighter administrative constraints for protection and enhancement of threatened, endangered, sensitive species habitat and other resource concerns such as water quality.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

Future changes in climate (i.e. increasing temperatures) combined with a change from a snow-dominated to a rain-dominated system will impact meadows due to changes in the hydrologic regime. Total meadow area may decline and wet meadows may shift to dry meadows, especially small irregularly shaped meadows at low to mid elevations (Gross and Coppoletta 2013).

Past suppression policies have led to conditions that can result in large areas of high severity fire that may be detrimental to meadow habitat. The Sequoia National Forest essentially abandoned even-aged reforestation management 20 years ago, in favor of stand maintenance thinning harvests intended to control density and growth of stands, generally for habitat maintenance. High fire severity can impact meadow habitat adjacent to these stands.

Information on Current Distribution of the Species in the Planning Unit

This species is restricted to the Piute Mountains on the Sequoia National Forest and Tehachapi Mountain, with few location records in CNDDDB. (Davenport 2014, 2018) states the species has not been reported in either mountain ranges since 1998. (Davenport 2018) added that with loss of habitat due to recent warming trends and long-term drought, this fritillary may be extinct, but there is possible habitat in the Piute Mountains, which is less accessible and not yet explored for butterflies.

(Davenport 2018) considers this rare subspecies appears to be in a serious decline and indicates that there have been no records for the butterfly in the Tehachapi Mountains and the Piute Mountains since 1998. NatureServe indicates that the subspecies has a very limited range in two mountain ranges in Kern County but states that the butterfly apparently is “fairly common in both ranges.” NatureServe further states that the “distribution data for U.S. states and Canadian provinces is known to be incomplete or has not been reviewed for this taxon” and that collectors may be a threat to the populations of this butterfly (NatureServe 2017).

Key Ecological Conditions in Plan Area

Tehachapi fritillary occurs in mountains meadows, forest openings and rocky outcrops where host plant species of the genus *Viola* occur, perhaps a subspecies of *Viola purpurea* (Lotts and T. Naberhaus 2017).

Sequoia – Summary

This butterfly is extremely rare and localized; in the plan area it was found only in the Piute Mountains since before 1998. Meadow habitat in the Piute Mountains is drying and may be impacted by tree encroachment, climate change, recreation, catastrophic fire events, grazing, and stream channel incision. It is unknown if a current viable population exists within the planning area and therefore, it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population in the plan area. Nonetheless, the plan components should maintain or restore

ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Aquatic Invertebrates

Western Pearlshell – Sequoia

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the western pearlshell in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: The pearlshell most commonly inhabits cool to cold rivers, but can also be found in smaller, cold headwater streams. They typically occupy areas with low velocities, low shear stress, low gradients, and stable substrates (Vannote and Minshall 1982, Toy 1998, Howard and Cuffey 2003, Stone, Barndt, and Gangloff 2004).

Table D-38. Key Threats, Plan Components and Expected Effects on Western Pearlshell

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat modification and water quality degradation due to forest management activities	<i>(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Open Water Dependent)</i>	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining aquatic invertebrate populations.
Habitat loss or degradation due to climate change or stochastic events	<i>(Reference Crosswalk for Susceptible to Stochastic Events)</i>	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

Habitat modification, water quality degradation, and climate change.

Threats under Forest Service Control

- Habitat loss or degradation due to forest management activities

Impacts to the western pearlshell from human-caused activities include eutrophication due to agricultural runoff and urbanization, sedimentation that smothers mussel beds, water diversions that reduce and alter instream flow regimes, mining, including suction dredge operations, introduction of exotic species, grazing, and water impoundments that reduce current velocities and allow for sediment deposition (Hovingh 2004, Lydeard 2004, Strayer and Downing 2006). Freshwater mussels are long-lived and relatively stationary organisms. Unlike more mobile

species they are sedentary as adults and thus especially vulnerable to water quality impairment. Excessive sediment is also a contaminant to habitat quality and has been associated with freshwater mussel declines. (Vannote and Minshall 1982) and (Howard and Cuffey 2006) attributed increased sediment with declines in *M. falcata*, implicating in-channel dredging, logging, and livestock use in the affected watersheds. Stream habitat degradation caused by historical grazing practices and suction dredging may have reduced the suitability of existing habitat, specifically in the Lower Kern area, where this species is historically known to have occurred. Increased recreational use of the Kern may cause disruption of habitat, increased water pollution, and dislodge adults. Ecosystem-level components would reduce impacts of these activities by avoiding timber in riparian conservation areas, managing grazing to avoid impacts to riparian ecosystems, and providing for ecological integrity of aquatic systems so that they provide high-quality habitat.

This mussel species depends on salmonid fish hosts to sustain and disperse larval clams. Since many salmonid species such as rainbow trout and salmon have experienced severe declines, western pearlshell mussels have declined as well (Krueger 2016). Therefore, plan components that aim to support healthy native fish populations, would benefit mussels as well.

Threats Not Under Forest Service Control

- Habitat loss or degradation due to climate change or other stochastic events

Because clear, cold water is a key habitat element required by the pearlshell, climatological changes that result in reduced streamflow, increased water temperatures, or both, may result in a further reduction in suitable habitats for the mussel or appropriate fish hosts. Climate predictions for the Central Valley and the southern Sierra Nevada include increased warming, less snowpack, and earlier spring snowmelt. These changes would influence the amount of water supply that can originate from forest lands and from precipitation. Uncertainty about the water supply makes planning for distribution of water in the future challenging (United States Department of Agriculture 2013a). Although the Forest cannot manage for climate change, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to its effects.

Information on Current Distribution of the Species in the Planning Unit

Although western pearlshell mussel is a widespread species and abundant in many locations across its range, there are numerous examples of its decline or extirpation from streams and rivers, especially in the more arid areas. Its decline has led to limited localities on the Sequoia National Forest. Database records on the Sequoia National Forest plan area include two CNDDDB records along the South Fork Kern River near Monache Meadows and NRIS record locations along the Little Kern River and the lower Kern River. There is a need to document the current distribution and abundance of this species, so that if *M. falcata* populations decline in the future, those declines can be documented and protection for vulnerable populations can be provided.

The ecological conditions for western pearlshell on the Sequoia National Forest plan area can be found in the South Fork Kern River and similar river systems, especially where the host fish species occurs. Although, the South Fork Kern River provides habitat for the Western pearlshell, there is little information on actual population trends or density. Documented host fishes for *M. falcata* include: cutthroat trout, rainbow/steelhead trout Chinook salmon, and brown trout, and a number of other fishes are considered potential hosts.

Key Ecological Conditions in Plan Area

Key ecological conditions include cold creeks and rivers with clean water and where sea-run salmon or native trout persist.

Sequoia – Summary

Although western pearlshell mussel is a widespread species and abundant in many locations across its range, there are numerous examples of its decline or extirpation from streams and rivers. Its decline has led to limited localities on the Sequoia National Forest. Competition for water uses occurs on the Sequoia National Forest. Water for hydroelectric, flood control, irrigation or drinking water alters the flow timing and amount throughout the year. Climate change is expected to reduce the supply, and may increase the competition for water use. Development and population growth will put even more demand on the available water. Increases in recreational use of the Kern River may cause disruption of habitat, increased water pollution, and dislodge adults. *Because several main threats to the species, i.e., climate change and water use*, are outside of Forest Service control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of western pearlshell within the plan area. Nonetheless, ecosystem-level components should help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

An Isopod – Sierra

Determination: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of an isopod (*Calasellus longus*) in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

General Key Ecological Conditions: Cave dwelling obligate subterranean species needs high water quality and quantity, including cold water conditions from seeps and springs in caves.

Table D-39. Key Threats, Plan Components and Expected Effects on *Calasellus Longus* (an Isopod)

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat modification and water quality degradation due to forest management activities	(Reference Crosswalk for Susceptible to Stochastic Events, Riparian/Water Dependent, Wet/Riparian Meadow Dependent, Open Water Dependent)	Ecosystem-level plan components provide for ecological integrity of aquatic systems so that they provide high-quality habitat and support healthy, self-sustaining aquatic species populations.
Competition and predation from invasive species	(Reference Crosswalk for Susceptible to Invasive Species)	Ecosystem-level plan components would minimize the occurrence and spread of invasive species, and thus would reduce threats to aquatic invertebrates

Key Threats to Persistence	Plan Components that Alleviate or Eliminate Key Threats	Effects Summary
Habitat loss or degradation due to climate change or stochastic events	(Reference Crosswalk for Susceptible to Stochastic Events)	The Forest Service cannot directly control the effects of climate change or other stochastic stressors; however, ecosystem-level components designed to move toward desired conditions would aid in forest habitats being more resilient to stochastic events including high-severity wildfire, drought, climate change, and widespread tree mortality.

Key Threats to Persistence

changes in water quantity or quality, habitat loss, competition and predation from invasive species, limited distribution and climate change

Threats under Forest Service Control

- Habitat degradation due to alterations to the natural flow regime caused by forest-management activities
- Competition and predation from invasive species

Activities that divert water flow from springs or degrade water quality can greatly impact this species. Recreation use on the Sierra National Forest may also pose a risk to *Calasellus longus* and its habitat. Grazing may also alter habitat conditions. Ecosystem-level components would reduce impacts of these activities by managing grazing and recreation to avoid impacts to riparian ecosystems, and providing for ecological integrity of aquatic systems so that they provide high-quality habitat.

Non-native fishes have been introduced or have invaded most waters of the range. These waters include extensive areas that were once fishless at high elevations. Sierra Nevada fisheries have largely shifted from native fishes, especially salmon and other migratory fishes, to introduced fishes (United States Department of Agriculture 2013b). Predation by non-native, introduced fishes is a major threat to this species. Smallmouth bass may readily consume *Calasellus longus*. Additionally, predation from introduced American bullfrogs likely impact this species. Ecosystem-level components that emphasize controlling current invasive species and preventing their spread would help to reduce this threat.

Threats Not Under Forest Service Control

- Limited distribution
- Habitat loss or degradation due to climate change or other stochastic events.

As a result of limited distribution, this species is highly susceptible to stochastic events and drying conditions resulting from increasing temperatures, along with events related to climate change. In addition, extremely limited dispersal ability of this species and isolated populations put it at further risk for localized extinctions. Although the Forest Service cannot control for these impacts, maintaining or improving watershed conditions would increase existing habitat resilience and the capability of these areas to support populations.

Warming temperatures can limit distributions of native fishes and other aquatic dependent species, like *Calasellus longus* (United States Department of Agriculture 2013b). Fish stocking in rivers, streams, reservoirs, and previously fishless lakes can reduce native fish and amphibians.

Information on Current Distribution of the Species in the Planning Unit

Calasellus longus was discovered in the early 1980s by students from the University of California, Davis (Bowman 1981). This isopod is an endemic species to the Shaver Lake area, located on the Sierra National Forest. Shaver Lake is not a natural body of water, but instead, a reservoir for water power formed by the Shaver Lake dam. Having evolved long before 1927, *C. longus* is native to the aquifer that supplies the spring from which the isopods were collected (Bowman 1981).

Key Ecological Conditions in Plan Area

Key ecological conditions for the *Calasellus longus* are water quality and quantity, including cold water conditions from seeps, springs in caves (Elliott et al. 2017)

Sierra – Summary

Threats this species are changes in the persistence or modifications of cool water conditions where this species occurs. These factors combined with direct mortality due to predation, recreation trampling, and stochastic events, including climate change, that affect water temperatures, puts *Calasellus longus* at significant risk. *Due to the main threat to the species, i.e., climate change*, is outside of Forest control, it is not within the inherent capability of the Forest Service to maintain or restore the ecological conditions to maintain a viable population of *Calasellus longus* within the plan area. Nonetheless, Ecosystem-level components should help maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

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Plant Species of Conservation Concern Determinations

The Sequoia National Forest has 49 botanical species of conservation concern, and the Sierra National Forest has 45 botanical species of conservation concern, for a total of 80 botanical species between the two national forests. Many of these species have very low number of occurrences and/or very limited distribution. Many plant species of conservation concern are endemic (i.e., exist only in one geographic region) to California, one national forest plan area, limited to a single county, etc. For example, Walker Pass milk-vetch is known from only four occurrences, all located in the Walker Pass area in Kern County.

Similar to the wildlife section above, this section summarizes the key ecological conditions and risk factors for each plant species of conservation concern, and the plan components that mitigate those risk factors, provide for persistence, and contribute to maintaining a viable population of each species of conservation concern within the plan areas. Information on species distribution, ecological conditions, and threats is largely excerpted from the rationale documents for plant species of conservation concern for each forest (USDA FS 2019a, b); additional information on each species of conservation concern, the associated selection process, and full references for best available science can be found in those documents and will not be repeated here. Supporting crosswalk tables that providing the full language for each plan component, threats, and species grouped by key ecological conditions was developed to create this summary.

Assumptions

Since many plant species of conservation concern have only one or two known occurrences, it is currently unknown if a truly viable population does indeed exist on the Sequoia and/or Sierra National Forests. In these instances, the national forest can contribute to ecological conditions that should move toward a desired condition that is within the natural range of variability, contributing to maintain a viable population to the extent it currently exists or might exist in the future.

A core element for the development of ecosystem based desired conditions for all species, is that management actions that move ecosystem conditions toward the natural range of variation will benefit species persistence. That is, the further a habitat departs from that historical distribution, the greater the risk to viability of associated species, so maintaining or restoring ecological conditions and functions similar to those under which native species evolved offers the best assurance against losses of biological diversity and maintains habitats for the vast majority of species in an area. However, for some species this approach may not be adequate, because the reference condition is not achievable or because of risks not related to habitat. In that case, additional species-specific plan components are added.

The relative rarity of a species alone does not constitute vulnerability. In analyzing persistence of a species, occurrence and distribution are factors included along with ecological conditions of habitat and the identified threats in the plan area. Because botanical species are relatively non-mobile, identified threats to species with very low numbers of occurrences and/or very limited distribution need to be managed at sites where they exist in order to improve resilience to stochastic events (e.g., wildfire, flooding, and climate change) and provide for persistence over the long term. For these reasons, all plant species of conservation concern were categorized into three major groups for the persistence analysis.

Methodology

Each of the botanical species of conservation concern from the Sequoia and Sierra National Forest are placed into one of three “Plant Species of Conservation Concern – Botanical Categories” as defined below. These categories are based on the factors summarized in the species of conservation concern rationale documents, that include associated best available scientific information (USDA FS 2019a, b).

Plant Species of Conservation Concern – Botanical Categories

- Category 1 botanical species are those species having very few occurrences (typically one or two) in the plan area, with identified threats to persistence, and the species occurs elsewhere.
- Category 2 botanical species are those species having low numbers of occurrences and/or limited distribution, and identified threats to persistence, in the plan area. Although some species are endemic to a national forest plan area, other species have several occurrences in the plan area and occurrences outside the plan area.
- Category 3 botanical species are those species with sufficient numbers and distribution of occurrences and individuals within occurrences such that inadvertent loss of individuals or occurrences will not threaten population persistence and viability.

The term “occurrences” in this case is used to describe discrete clusters of individuals, tracked as element occurrences, by state natural heritage programs, including the California Natural Diversity Database and by the Forest Service’s “Natural Resources Manager Threatened, Endangered, Sensitive, and Proposed” (NRM-TESP) site. For rare plants, element occurrences form the basis of quantification that drives global and state rankings of rarity (NatureServe.org)¹². Protection of occurrences does not imply protection of all individuals within an occurrence.

Plant Persistence Determination Outcomes

The three botanical categories of species of conservation concern are applied to one of these possible outcome determinations (i.e., the same discussed in the introduction to this chapter):

1. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area. No additional species-specific plan components are warranted.
2. The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.
3. The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of the [Category Number] in the plan area.
4. It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of the [Category Number] in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

The finding that a viable population will be maintained should not be construed to mean the agency believes there currently is a viable population for all plant species of conservation concern on the Sequoia or Sierra National Forest, rather that the plan components should provide the

¹² See references at the end of this section.

ecological conditions necessary to maintain a viable population to the extent such a population currently exists or exists in the future.

Forest Plan Components that Support Persistence

Forest-wide ecosystem plan components support natural ecological processes, functions, and biodiversity, and promote ecological conditions that are resilient to climate change and other stressors. Additional ecosystem plan components provide area-specific desired conditions and management direction, and are tailored to specific ecosystem types or management areas, including providing ecological conditions that support persistence of species of conservation concern in riparian conservation areas; habitat types that host many botanical species of conservation concern. Disturbance processes (such as fire, insect outbreaks, and climate change) and some management activities (such as grazing and recreation) are addressed by ecosystem and other plan components that consider effects to plant communities and/or species diversity.

Species-specific plan components provide additional forestwide guidance for at-risk species to promote healthy, resilient ecosystems that support functional plant and animal communities and self-sustaining populations of at-risk species. These plan components are particularly important to category 1 and category 2 botanical species of conservation concern because they address site-specific threats in occupied habitat. Species-specific plan components, including for special habitats, mitigate risk to persistence from land management activities, and provide guidance for addressing existing site-specific threats not related to project activities, while balancing the needs of at-risk species with other resource uses and ecological processes. In addition, species-specific potential management approaches suggest development of systematic and programmatic approaches to achieve conservation of species of conservation concern.

Individual Determinations – Plant Species of Conservation Concern

As opposed to the determinations for animal species of conservation concern, the determinations for plant species of conservation concern were found to be driven primarily by their corresponding botanical category, which relates to occurrence and distribution. The botanical category and determination outcome of each individual plant species of conservation concern are displayed in Table D-40, along with key threats, habitats, and a summary of the plan components that are particularly important for providing for the persistence and viability of each species in the plan area. Plan components have been designed to provide for viability of the species in the plan area, but cannot prevent all adverse impacts to individuals of the species. Table D-41 and Table D-42 are general crosswalk tables used to display where plan components apply to address threats and provide ecological conditions for viable populations of plant species of conservation concern.

Below we outline the determination finding for each of the three botanical categories, providing a species-specific example for each category. Persistence determinations are provided as species-specific paragraphs in order to facilitate understanding of the analytical approach used to categorize species and apply persistence determinations.

Category 1 Botanical Species

Category 1 botanical species are those species having one or two occurrences in the plan area, with identified threats to persistence, and the species has more occurrences outside the plan area. These species lack sufficient redundancy of individuals and distribution within the plan area to allow them to easily absorb and recover from adverse impacts of identified threats, including

climate change and other stochastic events, and face risk of local extirpation. Since botanical species are non-mobile, they need to be protected at the sites where they exist. For these species, species-specific plan components are key to addressing identified site-specific threats, and for ensuring that plant species of conservation concern are considered during project planning and implementation. For this reason, both forestwide and species-specific plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of Category 1 species within its range. Therefore, we find that determination outcome 4 best applies.

Determination 4: It is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain a viable population of category 1 botanical species in the plan area. Nonetheless, the plan components should maintain or restore ecological conditions within the plan area to contribute to maintaining a viable population of the species within its range.

Narrative Example - *Camissonia integrifolia* - Kern River evening primrose

Camissonia integrifolia is endemic to Kern County, where it occurs near Weldon and Kelso Canyon, in chaparral at elevations of 2500 to 3000 feet. There are 4 CNDDDB occurrences, with one occurrence in the Sequoia National Forest plan revision area located near Miracle Hot Springs. There are 14 Consortium of California Herbaria specimens from the same area of Kern County, near Weldon and Kelso Canyon, as the CNDDDB occurrences. These collections are from the 1950s through 2015. Table D-40 lists the key ecological conditions and risk factors for Kern River evening primrose and summarizes the plan components that support ecological conditions, mitigate for identified threats, and provide for persistence and contribute to maintaining a viable population.

Category 2 Botanical Species

Category 2 species have a low number of occurrences and/or very limited distribution in the plan area. Many category 2 plant species of conservation concern are endemic to the national forest or local area. Rarity is a factor that is considered along with ecological conditions of habitat and identified threats in the plan area. Identified threats include management and recreation activities, and stochastic events like climate change, wildfire, and flooding. Category 1 and 2 species face high risk of local extirpation because they lack sufficient redundancy of individuals and distribution to allow them to easily absorb and recover from such adverse impacts. For these species, the persistence of all occurrences is important to maintain population viability. Because botanical species are non-mobile, they need to be protected at the sites where they exist. For these species, species-specific plan components are key to addressing identified site-specific threats, and for ensuring that plant species of conservation concern are considered during project planning and implementation. Both forestwide and species-specific plan components are needed in order to provide the ecological conditions necessary to maintain viable populations of category 2 botanical SCC in the plan area. Therefore, we find that determination outcome 3 best applies.

Determination 3: The ecosystem plan components may not provide the ecological conditions necessary to maintain a viable population of the category 2 botanical species of conservation concern in the plan area. Therefore, additional species-specific plan components have been provided. The combination of ecosystem and species-specific plan components should provide the ecological conditions necessary to maintain a viable population of these botanical species in the plan area.

Narrative Example - *Eriophyllum congdonii*, Congdon's woolly sunflower

Eriophyllum congdonii is endemic to the Merced River drainage in Mariposa County. It occurs in rocky outcrops of open, chaparral-live oak woodlands and yellow-pine forests at 500-1900 meters elevation in Mariposa Co. The California Natural Diversity Database (CNDDB) contains 15 recorded occurrences for *Eriophyllum congdonii* with eight of them known from the Sierra NF. One occurrence is along an established trail. Table D-40 lists the key ecological conditions and risk factors for Congdon's woolly sunflower, and summarizes the plan components that support ecological conditions, mitigate for identified threats, and provide for persistence and contribute to maintaining a viable population.

Category 3 Botanical Species

Category 3 species have sufficient numbers and distribution of occurrences, and individuals within occurrences, that inadvertent loss of individuals or some occurrences will not threaten population persistence and viability. They have a very low number of occurrences and/or very limited distribution in the plan area. Some category 3 plant species of conservation concern are endemic to the Sequoia or Sierra National Forest. As with Category 1 and 2 species, many species occurrences face site-specific threats. But for these species, ecosystem plan components should provide the ecological conditions necessary to maintain a viable population in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection. Therefore, we find that determination outcome 2 best applies.

Determination 2: The ecosystem plan components should provide the ecological conditions necessary to maintain a viable population of the category 2 species in the plan area. Nonetheless, additional species-specific plan components have been provided for added clarity and/or measures of protection.

Narrative Example - *Ivesia campestris* - field ivesia

Ivesia campestris is a perennial herb that is endemic to the southern Sierra Nevada, including many small populations on Kern Plateau. Ecosystem types associated with this species include subalpine and meadow. There are fifty-six total CNDDB occurrences, with twelve occurring on the Sequoia National Forest plan area and the majority on the Inyo National Forest. Occurrences on the Sequoia National Forest include along Rowell Creek, Albanita Meadow, Broder Meadow, Powell Meadow, and Big Meadow. Threats include road maintenance and unauthorized OHV travel. Table D-40 lists the key ecological conditions and risk factors for field ivesia, and summarizes the plan components (ecosystem and at-risk species-specific) that support ecological conditions and mitigate for identified threats in order to provide for persistence and contribute to maintaining a viable population.

Determinations for All Botanical Species of Conservation Concern

Plan components for alternative B are used in Table D-40 to display the primary plan components used to provide ecological conditions necessary to maintain a viable population of each species of conservation concern in the plan area. and address key threats in order to provide persistence. This table provides a summary of key ecosystem habitats and threats. More detailed information on individual species can be found in the Rationales for Plant Species Considered for Designation as Species of Conservation Concern (USDA 2018). Plan components related to plant species of conservation concern are similar for all the action alternatives.

Table D-40. Persistence determinations for botanical species of conservation concern for the Sequoia and Sierra National Forest, including key ecological conditions and risk factors for each species; and the plan components that mitigate those risk factors, provide for persistence, and contribute to maintaining a viable population of each species

Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Allium yosemitense</i>	Sierra	2	3	Rock outcrop, chaparral/live oak, montane, upper montane	Recreation trampling, invasive species, mining	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-FW-OBJ 01, 02 REC-FW-GDL 03 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 GEO-FW-DC 01 FIRE-FW-GDL 06	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Astragalus ertterae</i>	Sequoia	4	1	Pinyon-juniper	Recreation trampling, grazing, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 REC-FW-GDL 03 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

Appendix D. Persistence Analysis for Species of Conservation Concern

Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Astragalus lentiginosus</i> var. <i>kernensis</i>	Sequoia	2	3	Subalpine, lodgepole, dry forb, meadow	Recreation trampling, unauthorized OHV travel, road maintenance, grazing	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-ALPN-DC 03 TERR-LDGP-DC 02, 04, 08 WTR-RCA-DC 06, 08 REC-FW-GDL 03 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01, 04 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 WTR-RCA-DC 02 MA-CW-DC 01
<i>Astragalus shevockii</i>	Sequoia	3	2	Upper montane Jeffrey pine	Grazing, recreation trampling, fire suppression activities	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-JEFF-DC 01, 02, 07 REC-FW-GDL 03 FIRE-FW-GDL 06 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Astragalus subvestitus</i>	Sequoia	2	3	Montane, pinyon-juniper	Grazing, livestock trampling, unauthorized OHV travel	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Boechea evadens</i>	Sequoia	2	3	Rock outcrop, upper montane	Recreation trampling	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 FIRE-FW-GDL 06 TERR-UPPR-DC 01 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Boechea tularensis</i>	Sequoia, Sierra	2	3	Rock outcrop, montane, upper montane, subalpine, red fir, meadow	Climate change, unauthorized OHV travel, recreation trampling	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-RFIR-DC 02,03,06 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 FIRE-FW-GDL 06 REC-FW-GDL 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Botrychium ascendens</i>	Sierra	4	1	Aquatic/riparian, meadow, montane, upper montane, subalpine	Hydrologic alteration, recreation trampling including packstock, unauthorized OHV travel, severe soil disturbance, grazing, climate change	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 WTR-FW-DC 01, 03 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 MA-CW-DC 04 REC-FW-GDL 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 MA-CW-DC 01
<i>Botrychium crenulatum</i>	Sequoia, Sierra	4	1	Aquatic/riparian, meadow, upper montane, subalpine	Hydrologic alteration, recreation trampling, unauthorized OHV travel, severe soil disturbance, grazing, livestock trampling, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 WTR-FW-DC 01, 03 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 MA-CW-DC 02, 04 REC-FW-GDL 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 MA-CW-DC 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Botrychium lineare</i>	Sierra	4	1	Aquatic/riparian, meadow, upper montane, subalpine	Hydrologic alteration, recreation trampling, unauthorized OHV travel, severe soil disturbance, grazing, livestock trampling, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 WTR-FW-DC 01, 03 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 MA-CW-DC 04 REC-FW-GDL 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01, 05, 06 TERR-FW-DC 05
<i>Botrychium minganense</i>	Sierra	4	1	Aquatic/riparian, meadow, upper montane, subalpine	Hydrologic alteration, recreation trampling, unauthorized OHV travel, grazing, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 WTR-FW-DC 01, 03 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 MA-CW-DC 04 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01, 05, 06 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Botrychium montanum</i>	Sierra	4	1	Aquatic/riparian, meadow, montane, upper montane, subalpine	Grazing, hydrologic alteration, conifer encroachment, recreation trampling, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 WTR-FW-DC 01, 03 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 MA-CW-DC 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01, 05, 06 TERR-FW-DC 05
<i>Bruchia bolanderi</i>	Sierra	2	3	Aquatic/riparian, montane, upper montane, subalpine	Grazing, hydrologic alteration, road maintenance, recreation trampling, vegetation treatment activities	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 WTR-FW-DC 01, 03 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 MA-CW-DC 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Calochortus striatus</i>	Sequoia	4	1	Aquatic/riparian, meadow, arid shrubland	Livestock trampling, road maintenance, hydrologic alterations, horticultural collecting, invasive species, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-XER-DC 01, 02 TERR-XER-STD 01 WTR-FW-DC 01, 03 WTR-FW-STD 01, 02 WTR-RCA-DC 02, 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 MA-CW-DC 04 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INFR-FW-DC 01, 04 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Calochortus westonii</i>	Sequoia	2	3	Meadow, mixed conifer, black oak/ponderosa pine	Mechanical vegetation treatment activities, road maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-POND-DC 01 TERR-DMC-DC 02 TERR-MMC-DC 01, 06 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Calyptridium pygmaeum</i>	Sequoia, Sierra	4	1	Rock outcrop, upper montane, subalpine, alpine	Climate change, recreation, trampling, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Camissonia integrifolia</i>	Sequoia	4	1	Chaparral	Grazing; unauthorized OHV travel; road maintenance, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Camissonia sierrae</i> ssp. <i>alticola</i>	Sierra	2	3	Rock outcrop, montane, upper montane	Invasive species, recreation trampling, road/trail maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 FIRE-FW-GDL 06 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Carlquistia muiirii</i>	Sequoia, Sierra	4	1	Rock outcrop, black oak/ponderosa pine, montane chaparral	Mechanical vegetation and fuels treatment activities, recreation trampling	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-POND-DC 01 TERR-MCHP-DC 01, 02 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Carpenteria californica</i>	Sierra	2	3	Chaparral/live oak, black oak/ponderosa pine, montane	Invasive species, vegetation/fuels treatment activities, altered fire regime, road maintenance, climate change	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03, 08 TERR-FW-OBJ 01, 02 TERR-CHAP-DC 02 TERR-POND-DC 01 TERR-MONT-DC 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STED 02 FIRE-FW-GDL 01, 03 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Cinna bolanderi</i>	Sierra	4	1	Meadow, aquatic/riparian, montane	Grazing and trampling; recreation trampling; soil compaction; hydrologic alteration; mechanical/fuels treatments activities, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 TERR-MONT-DC 01, 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Clarkia biloba</i> <i>ssp. australis</i>	Sierra	4	1	Chaparral/live oak	Invasive species, road maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Clarkia lingulata</i>	Sierra	4	1	Chaparral/live oak	Invasive species, road maintenance, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Collomia rawsoniana</i>	Sierra	2	3	Aquatic/riparian meadow, seep, montane, upper montane	Altered fire regime, fuels treatment	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-FW-OBJ 01, 02 WTR-RCA-SPR-DC 01, 03 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STD 02 FIRE-FW-GDL 01, 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Cordylanthus eremicus</i> ssp. <i>kernensis</i>	Sequoia	4	1	Pinyon-juniper, arid shrubland and woodland, upper montane	Recreation trampling, unauthorized OHV travel	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 TERR-XER-DC 01, 02 TERR-XER-STD 01 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Cypripedium montanum</i>	Sierra	4	1	Montane and upper montane	Altered fire regime, mechanical vegetation/fuels treatment activities, invasive species, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STD 02 FIRE-FW-GDL 01, 03 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Deinandra mohavensis</i>	Sequoia	4	1	Chaparral, arid shrubland	Grazing, hydrologic alteration, recreation trampling, road maintenance, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 TERR-XER-DC 01, 02 TERR-XER-STD 01 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Delphinium inopinum</i>	Sierra	4	1	Rock outcrop, montane, upper montane	Invasive species, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 FIRE-FW-GDL 06 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Delphinium purpusii</i>	Sequoia	3	2	Rock outcrop, cliff, carbonate, pinyon-juniper, chaparral/live oak, montane	Recreation trampling, unauthorized OHV travel, invasive species; altered fire regime	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-CHAP-DC 02 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STD 02 FIRE-FW-GDL 01, 03 FIRE-FW-GDL 06 INFR-FW-DC 01, 04 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Dicentra nevadensis</i>	Sequoia, Sierra	4	1	Rock outcrop, subalpine, alpine	Unauthorized OHV travel, invasive species, climate change, High recreation use/trampling, road maintenance, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Diplacus pictus</i> <i>Mimulus pictus</i>	Sequoia	4	1	Rock outcrop, blue oak woodland	Grazing, recreation trampling, unauthorized OHV travel, trail maintenance, invasive species	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-BLU-DC 02, 03 FIRE-FW-GDL 06 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Draba sharsmithii</i>	Sierra	4	1	Rock outcrop, alpine	Climate change, recreation trampling, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-ALPN-DC 03 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Eriastrum tracyi</i>	Sequoia Sierra	3 4	2 1	Blue oak woodland, chaparral/live oak	Invasives, unauthorized OHV travel, recreation trampling, road maintenance, road salt, vegetation/fuel s treatment activities, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-BLU-DC 02, 03 TERR-CHAP-DC 02 INFR-FW-DC 01, 04 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Erigeron aequifolius</i>	Sequoia	2	3	Rock outcrop, Pinyon-juniper	Recreation trampling, vegetation/fuel s treatment activities	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Erigeron multiceps</i>	Sequoia	2	3	Riparian, meadow, upper montane	Altered fire regime, grazing, recreation trampling, unauthorized OHV travel, and mechanical treatments	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-FW-OBJ 01, 02 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STED 02 FIRE-FW-GDL 01, 03 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Eriogonum breedlovei</i> var. <i>breedlovei</i>	Sequoia	3	2	Rock outcrop, carbonate, mixed conifer, pinyon-juniper	Unauthorized OHV travel	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-DMC-DC 02 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 INFR-FW-DC 01, 04 FIRE-FW-GDL 06	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Eriogonum nudum</i> var. <i>regirivum</i>	Sierra	4	1	Rock outcrop, carbonate, chaparral/live oak	Invasive species, recreation trampling, trail construction, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-CHAP-DC 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Eriogonum ovalifolium</i> var. <i>monarchense</i>	Sequoia, Sierra	3	2	Rock outcrop, carbonate, pinyon-juniper	Invasives, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 FIRE-FW-GDL 06	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Eriophyllum congdonii</i>	Sierra	3	2	Rock outcrop, chaparral/live oak, montane	Invasive species, mining, recreation trampling	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-CHAP-DC 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 FIRE-FW-GDL 06 GEO-FW-DC 01 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Erythranthe gracilipes</i> <i>Mimulus gracilipes</i>	Sierra	4	1	Rock outcrop, blue oak woodland, chaparral/live oak, montane, complex early seral habitat	Invasives, road maintenance and construction, improperly timed fuels or timber treatments, altered fire regime, unauthorized OHV travel, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-BLU-DC 02, 03 TERR-CHAP-DC 02 TERR-MONT-DC 01, 02 TERR-CES-DC01 TERR-CES-GDL 01, 03 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STED 02 FIRE-FW-GDL 01, 03 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 FIRE-FW-GDL 06 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Erythranthe norrisii</i> <i>Mimulus norrisii</i>	Sierra	4	1	Rock outcrop, blue oak woodland, chaparral/live oak	Invasive species, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-BLU-DC 02, 03 TERR-CHAP-DC 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 FIRE-FW-GDL 06	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Erythronium pluriflorum</i>	Sierra	3	2	Rock outcrop, upper montane, subalpine	Unauthorized OHV travel, invasives, climate change, road maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 05 FIRE-FW-GDL 06 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Fissidens aphelotaxifolius</i>	Sierra	4	1	Aquatic/riparian, montane, upper montane	hydrologic alteration, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Fritillaria brandegeei</i>	Sequoia	3	2	Montane, black oak/ponderosa pine	Ungulate browsing, inappropriate mechanical vegetation/fuels treatment activities, recreation trampling	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-POND-DC 01 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Gilia yorkii</i>	Sequoia, Sierra	4	1	Rock outcrop, carbonate, pinyon-juniper	Climate change, invasives, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 FIRE-FW-GDL 06	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Githopsis tenella</i>	Sequoia	4	1	Montane chaparral	Recreation trampling; grazing; fire suppression activities, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MCHP-DC 01, 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Helodium blandowii</i>	Sequoia	4	1	Subalpine, meadow	Hydrologic alteration, grazing, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-ALPN-DC 05 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Hesperocyparis nevadensis</i>	Sequoia	2	3	Pinyon-juniper, chaparral/live oak	Altered fire regime, recreation trampling, horticultural collection, fire suppression activities	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 TERR-CHAP-DC 02 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STED 02 FIRE-FW-GDL 01, 03 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Heterotheca monarchensis</i>	Sequoia	4	1	Montane, carbonate	Invasive species, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Heterotheca shevockii</i>	Sequoia	4	1	Blue oak woodland, montane	Road maintenance, recreation trampling	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-BLU-DC 02, 03 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Horkelia parryi</i>	Sierra	4	1	Chaparral/live oak	Altered fire regime, invasive species, unauthorized OHV travel, improperly timed mechanical treatments, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STED 02 FIRE-FW-GDL 01, 03 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Horkelia tularensis</i>	Sequoia	3	2	Montane	Recreation trampling, road maintenance, infrastructure maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Hulsea brevifolia</i>	Sequoia, Sierra	4 3	1 2	Mixed conifer, subalpine, upper montane	Altered fire regime, road maintenance, recreation trampling, mechanical vegetation/fuels treatment activities	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 05 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STED 02 FIRE-FW-GDL 01, 03 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Ivesia campestris</i>	Sequoia	2	3	Subalpine, meadow	Road maintenance, unauthorized OHV travel	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-ALPN-DC 05 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Leptosiphon serrulatus</i>	Sierra	4	1	Blue oak woodland, chaparral/live oak, montane	Invasive species, road maintenance, inappropriate grazing	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-BLU-DC 02, 03 TERR-CHAP-DC 02 TERR-MONT-DC 01, 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Lewisia congdonii</i>	Sierra	4	1	Chaparral/live oak, montane, upper montane	Mining, road maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 GEO-FW-DC 01 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Lewisia disepala</i>	Sequoia, Sierra	4	1	Rock outcrop, montane, upper montane	Unauthorized OHV travel, fuels treatment, recreation trampling	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 FIRE-FW-GDL 06 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>	Sierra	4	1	Rock outcrop, montane, upper montane	Unauthorized OHV travel	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 FIRE-FW-GDL 06 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Lupinus citrinus</i> var. <i>citrinus</i>	Sierra	2	3	Rock outcrop, blue oak woodland, chaparral/live oak, montane	Unauthorized OHV travel, road maintenance, climate change, invasive species	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-BLU-DC 02, 03 TERR-CHAP-DC 02 TERR-MONT-DC 01, 02 FIRE-FW-GDL 06 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Meesia uliginosa</i>	Sequoia, Sierra	4	1	Aquatic/riparian, fen, meadow, montane, upper montane	Hydrologic alteration, rarity, climate change	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 WTR-RCA-DC 06 WTR-RCA-STD 08, 10, 11, 12, 13, 14 WTR-RCA-GDL 02 WTR-RCA-MEAD-DC 02, 05, 06	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Mielichhoferia shevockii</i> <i>Schizymenium shevockii</i>	Sequoia, Sierra	4	1	Rock outcrop, blue oak woodland, chaparral/live oak, montane	Road maintenance, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-BLU-DC 02, 03 TERR-CHAP-DC 02 TERR-MONT-DC 01, 02 FIRE-FW-GDL 06 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Navarretia peninsularis</i>	Sequoia	4	1	Meadow, montane, montane chaparral	Road maintenance, unauthorized OHV travel, recreation trampling, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-MCHP-DC 01, 02 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Nemacladus calcaratus</i>	Sequoia	3	2	Pinyon-juniper	Recreation trampling, grazing, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Nemacladus twisselmannii</i>	Sequoia	4	1	Montane	Grazing, fire suppression activities, fuels treatments	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Oreonana purpurascens</i>	Sequoia	2	3	Rock outcrop, upper montane, subalpine	Grazing, recreation trampling, recreation development, trail maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 05 FIRE-FW-GDL 06 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Oreonana vestita</i>	Sequoia	4	1	Rock outcrop, montane, upper montane, subalpine, talus	Grazing, recreation, trampling, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 TERR-ALPN-DC 05 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Orthotrichum spjutii</i>	Sequoia	4	1	Rock outcrop, pinyon-juniper	Recreation trampling, grazing, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Phacelia nashiana</i>	Sequoia	4	1	Pinyon-juniper, sagebrush	Grazing, mining, unauthorized OHV travel, road maintenance	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 TERR-SAGE-DC 01, 02, 03, 04 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 GEO-FW-DC 01 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Phacelia novemmillensis</i>	Sequoia	2	3	Pinyon-juniper, montane, live oak	Altered fire regime, recreation trampling; unauthorized OHV travel, mechanical treatments; recreational development; grazing	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 TERR-MONT-DC 01, 02 TERR-OAK-GDL 01 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STED 02 FIRE-FW-GDL 01, 03 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Platanthera yosemitensis</i>	Sierra	4	1	Aquatic/riparian, fens, montane, upper montane	Grazing, hydrologic alteration, invasive species, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 WTR-RCA-DC 06 WTR-RCA-STD 08, 10, 11, 12, 13, 14 WTR-RCA-GDL 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Pohlia tundrae</i>	Sierra	4	1	Aquatic/riparian, meadow, alpine, subalpine	Livestock trampling, hydrologic alteration, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 TERR-ALPN-DC 03, 05 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Ribes menziesii</i> <i>var. ixoderme</i>	Sierra	4	1	Chaparral/live oak, blue oak woodland	Altered fire regime, fire suppression activities, fuels treatments, invasive plants, unauthorized OHV travel, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 TERR-BLU-DC 02 TERR-FW-OBJ 01, 02 FIRE-FW-DC 04 FIRE-FW-GOAL 04 FIRE-FW-STD 02 FIRE-FW-GDL 01, 03 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Sidalcea multifida</i>	Sequoia	2	3	Aquatic/riparian, meadow, black oak/ponderosa, pinyon-juniper	Recreation trampling, unauthorized OHV travel	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-POND-DC 01 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 INFR-FW-DC 01, 04 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Streptanthus cordatus</i> var. <i>piutensis</i>	Sequoia	2	3	Chaparral, Piute cypress, pinyon-juniper	Road maintenance, unauthorized OHV travel, fire suppression activities	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-CHAP-DC 02 TERR-FW-DC 02, 03 TERR-PINY-DC 01, 02 TERR-PINY-GDL 01 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Streptanthus fenestratus</i>	Sequoia, Sierra	4	1	Rock outcrop, carbonate chaparral/live oak, montane,	Recreation trampling, invasive species, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-CHAP-DC 02 TERR-MONT-DC 01, 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 FIRE-FW-GDL 06 REC-FW-GDL 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Symphyotrichum defoliatum</i>	Sequoia	4	1	Aquatic/riparian, meadow, chaparral, montane	Invasive species, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-MONT-DC 01, 02 TERR-MCHP-DC 01, 02 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05
<i>Tauschia howellii</i>	Sierra	4	1	Rock outcrop, montane, upper montane	Infrastructure maintenance, fire suppression activities, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-UPPR-DC 01 FIRE-FW-GDL 06 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Trifolium bolanderi</i>	Sierra	2	3	Aquatic/riparian, meadow, upper montane	Grazing, hydrologic alteration	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-UPPR-DC 01 WTR-RCA-DC 06 WTR-RCA-MEAD-DC 02, 05, 06 WTR-RCA-STD 10, 12, 14 WTR-RCA-GDL 02 RANG-FW-DC 01, 02, 03 RANG-FW-STD 01	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

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Species	Forest	Determination	Category	Principal Habitats	Key Threats	Ecosystem Plan Components	Species-specific Plan Component
<i>Trifolium kingii</i> <i>ssp. dedeckerae</i> <i>T. dedeckerae</i>	Sequoia	4	1	Rock outcrop, alpine, subalpine, montane	Climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-SH-DC 01, 02, 03 TERR-MONT-DC 01, 02 TERR-ALPN-DC 03, 05 FIRE-FW-GDL 06	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05 TERR-SH-STD 01
<i>Viburnum ellipticum</i>	Sequoia, Sierra	4	1	Chaparral/live oak, black oak/ponderosa	Fuels treatment activities, invasive species, road maintenance, fire suppression activities, climate change, rarity	SPEC-FW-DC 01 SPEC-FW-GOAL 01 TERR-FW-DC 02, 03 TERR-CHAP-DC 02 TERR-MONT-DC 01, 02 TERR-POND-DC 01 INV-FW-DC 01, 02 INV-FW-GOAL 01 INV-FW-STD 02, 03, 04 INV-FW-GDL 01, 02, 03 INFR-FW-DC 01, 04	SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-GDL 01, 05 TERR-FW-DC 05

Crosswalk – Plant Species of Conservation Concern

The following tables are crosswalks to display how plan components meet plant species of conservation concern habitat needs (Table D-41) and address threats (Table D-42). These table do not include all plan components that provide for persistence, but focus on the most relevant plan components that provide for key ecological conditions and mitigate threats.

Ecosystem Types Crosswalk

Table D-41. Crosswalk between plant species of conservation concern and key ecological conditions with primary plan components that provide for persistence

Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
All plant species of conservation concern	<p>TERR-FW-DC</p> <p>02 Vegetation structure and composition provide ecosystem resilience to climate change and other stressors including altered fire regimes, drought, and flooding in riparian systems.</p> <p>03 Terrestrial ecosystems retain their essential processes and functions.</p> <p>SPEC-FW-DC</p> <p>01 Persistent populations of native, and desirable nonnative, plant and animal species are supported by healthy ecosystems, essential ecological processes, and land stewardship activities, and reflect the diversity, quantity, quality, and capability of natural habitats on the National Forest. These ecosystems are also resilient to uncharacteristic fire, climate change, and other stressors, and this resilience supports the long-term sustainability of plant and animal communities.</p> <p>SPEC-FW-GOAL</p> <p>01 Communicate, collaborate, and cooperate with other agencies, Tribes, partners and private landowners to encourage resource protection and restoration of ecological conditions that benefit wildlife, fish, and plants across ownership boundaries.</p>	<p>TERR-FW-DC</p> <p>05 Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and support the persistence of species of conservation concern.</p> <p>SPEC-FW-DC</p> <p>02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impacts from threats (such as disease and other site-specific threats). Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for species of conservation concern.</p> <p>03 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements of special habitats (like special features such as carbonate rock outcrops) exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions.</p> <p>SPEC-FW-GOAL</p> <p>03 Work with the California Department of Fish and Wildlife (following the memoranda of understanding) and U.S. Fish and Wildlife Service to restore and maintain essential habitat for at-risk species and implement other recovery actions according to species recovery plans.</p> <p>SPEC-FW-GDL</p> <p>01 Design features, mitigation, and project timing considerations should be incorporated into projects that may affect habitat for at-risk species where they occur to minimize impacts to ecological conditions that provide for the persistence of at-risk species.</p> <p>05 Habitat management objectives or goals from approved conservation strategies or agreements should be incorporated, if appropriate, in the design of projects that will occur within at-risk species habitat.</p>

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Alpine	TERR-ALPN-DC 05 Alpine ecosystems are resilient to climate change, and fires are small and occur infrequently.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05
Subalpine	TERR-ALPN-DC 03 Subalpine woodlands are resilient to insects, diseases, fire, wind, and climate change. High-elevation white pines whitebark pine, limber pine, and foxtail pine are healthy and vigorous, with a low incidence of white pine blister rust, and resilient to moisture stress and drought. White pine blister rust-resistant trees are regenerating, and populations of high-elevation white pines have the potential to expand above the tree line.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05
Special habitats	TERR-SH-DC 01 The integrity of special habitats is maintained or improved from current conditions. Composition, diversity, and structure of unique plant assemblages are maintained in all areas, including those with multiple-use activities. 02 Microclimate or smaller scale habitat elements provide habitat and refugia for species with a specific geographic or restricted distribution. 03 Conditions remain suitable for long-term sustainability of the suite of native plants adapted to special habitats and their associated symbiotic associations, such as insect pollinators. FIRE-FW-GDL 06 During wildfires, avoid fire management activities in special habitats except when necessary to protect life and property. This includes activities such as line construction, staging areas, safety zones, water drafting and camps. When conducting fire management activities near special habitats, take extra measures to avoid spread of invasive plants.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05 TERR-SH-STD 01 At the project scale, evaluate and incorporate maintenance and enhancement needs for special habitats into project design and implementation.
All upper montane	TERR-UPPR-DC 01 At the landscape scale, fire is a key ecological process in upper montane landscapes, restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor. Fires occur regularly to irregularly, depending on vegetation type. Fires in this zone burn with low, moderate, or mixed severity with minimal patches of high severity greater than 75 percent basal area mortality rarely greater than 200 to 250 acres. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Red fir	<p>TERR-RFIR-DC</p> <p>02 Fires occur every 25 to 80 years as a key ecological process in red fir forests. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity.</p> <p>03 At the landscape scale, areas dominated by medium and large-diameter trees and low to moderate canopy cover between 10 and 60 percent comprise most of the landscape. Trees are denser in some locations such as north-facing slopes and canyon bottoms, near meadows, or where snow accumulates. Early seral vegetation, shrubs, grasses, herbaceous plants, tree seedlings or saplings, mostly occur in very small areas, intermixed within forest stands or patches.</p> <p>06 At the mid- to fine scale, small openings mostly less than 0.1 to 0.5 acre are intermixed within stands of trees; they make up 5 to 20 percent of the area within tree stands, have less than 10 percent tree cover, are irregularly shaped, and often contain herbaceous plants, shrubs, and tree seedlings and saplings. Some openings and the understory of some red fir patches have little to no understory plants but instead have a high diversity of mushrooms and other fungi.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Lodgepole pine	<p>TERR-LDGP-DC</p> <p>02 Fires occur every 30 to 100 years as a key ecological process in lodgepole pine forest. Fire as an ecological process creates, restores, and maintains ecosystem resilience and increases understory plant vigor, heterogeneity, and habitat diversity.</p> <p>04 In wet lodgepole pine forests, areas dominated by medium- and large-diameter trees comprise more than 45 percent of the landscape. Tree stocking basal area is highly variable, ranging from 50 to 280 square feet per acre, with most less than 150 square feet per acre. Canopy cover ranges from 20 to 70 percent but is generally 50 percent. Small openings with less than 10 percent tree cover are irregular in shape, and make up from 5 to 20 percent of the area and contain a mix of grasses, herbaceous plants, and shrubs. Sufficient tree regeneration in openings provides for stand replacement.</p> <p>07 In dry lodgepole pine forests, areas dominated by medium- and large-diameter trees comprise more than 60 percent of the landscape. Canopy cover is generally 10 to 40 percent but may exceed 40 percent in small patches and moist microsites.</p> <p>08 Within dry lodgepole pine patches, individual trees are variably and often widely spaced. Tree stocking basal area is highly variable with most stands having around 120 square feet per acre but ranging from 20 to 200 square feet per acre. Small openings with less than 10 percent tree cover are irregular in shape and make up from 10 to 50 percent of the area and contain a mix of bare ground, rock, grasses, herbaceous plants and shrubs.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Jeffrey pine	<p>TERR-JEFF-DC</p> <p>01 At the landscape scale, the Jeffrey pine type is part of a heterogeneous mosaic of upper montane forests, shrublands, and other vegetation types. Forests are dominated by Jeffrey pine trees and are generally open. Open-canopied stands dominate the landscape, with generally less than 10 percent of the area having more than 40 percent canopy cover. Open canopies allow shade-intolerant Jeffrey pine tree regeneration.</p> <p>02 Fire is a key ecological process, creating a diversity of vegetation types, maintaining understory plant diversity and lowering surface fuels. Fires occur frequently, every 10 to 15 years, with mostly low and moderate vegetation burn severity.</p> <p>07 At the fine scale, openings of various shapes surround and are intermixed with trees. These gaps make up from 10 to 70 percent of the area, are typically less than 0.2 to 0.5 acre, and contain herbaceous plants, shrubs and tree regeneration.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
All Montane	<p>TERR-MONT-DC</p> <p>01 At the landscape scale, the Sierra Nevada montane landscape is a heterogeneous mosaic of open and closed canopy forest patches, meadows and riparian areas. These ecosystem types occur in a complex mosaic of different densities, sizes, and species mixed across large landscapes that vary with topography, soils, and snow accumulation. The composition, structure, and function of vegetation make these ecosystems resilient to fire, drought, insects, pathogens, and climate change. The mix of seral stage patches, and open versus closed canopied areas, varies by forest type as described in table 1. Large and old trees are common in later seral stages throughout the landscape and in varying densities see "Old Forest Habitats" section.</p> <p>02 At the landscape scale, fire is a key ecological process restoring and maintaining patchy fuel loads, and increasing heterogeneity and understory plant vigor. Fires occur regularly, generally every 10 to 20 years. Fires in this zone burn with low, moderate, or mixed severity with minimal patches of high severity greater than 75 percent basal area mortality rarely greater than 200 to 250 acres in size. The proportion of areas burned at high severity within a fire is generally less than 10 to 15 percent.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Ponderosa pine	<p>TERR-POND-DC</p> <p>01 At the landscape scale, the ponderosa pine vegetation type consists of open forests with a mosaic of varied tree sizes, densities and understory vegetation. They are dominated by ponderosa pine trees and, where black oak is common, co-dominated by black oak. Understory shrubs and plants are common. These areas are highly resilient.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Dry mixed conifer	<p>TERR-DMC-DC</p> <p>02 At the landscape scale, areas dominated by medium and large-diameter trees comprise more than 60 percent of the landscape. Overstory tree canopy cover is variable and ranges from 10 to 50 percent at a fine scale, with some small patches exceeding 50 percent cover. Trees are denser in some locations, such as north-facing slopes and canyon bottoms, but in small patches in limited areas less than 20 percent of the area. Vigorous shrubs cover 10 percent or more of the area, with density varying by aspect, slope, and soil type.</p> <p>04 At the mid- to fine scale, small irregularly shaped openings with less than 10 percent tree cover make up from 10 to 50 percent of the area, and contain a mix of grasses, herbaceous plants and shrubs.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Moist mixed conifer	<p>TERR-MMC-DC</p> <p>01 At the landscape scale, varying mixtures of Jeffrey or ponderosa pine, white fir, red fir, incense cedar and sugar pine trees occur. Native shrubs and plants are common in the understory.</p> <p>06 At the fine scale, irregularly shaped groups of trees and widely spaced trees are variably spaced with some tight clumps. Vigorous shrub cover varies from 10 to 60 percent of the area. Openings with less than 10 percent tree cover are in various shapes and intermixed with groups of trees. These openings make up 10-30 percent of the area, are typically less 0.5 acre, and contain a mix of grasses, forbs, and shrubs.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Complex early seral habitats	<p>TERR-CES-DC</p> <p>01 Complex early seral habitat contains a sufficient abundance and distribution of snags (especially large-diameter snags) for cavity-nesting wildlife, variable densities of native shrubs and herbaceous plants, and resprouting oak and aspen where they occur.</p> <p>Exceptions:</p> <ul style="list-style-type: none"> Does not apply to community buffers where there is no overlap with WHMA. Does not apply to CWPZ where there is no overlap the WHMA. <p>TERR-CES-GDL</p> <p>01 Post-disturbance restoration projects should be designed to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover.</p> <p>03 Post-disturbance restoration projects should be designed to manage the development of fuel profiles over time.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Montane chaparral	<p>TERR-MCHP-DC</p> <p>01 Chaparral consists of native shrub and understory species that reflect the natural range of variation for the site. The chaparral vegetation type is composed of varying age classes and densities that protect against accelerated erosion, with 2 to 20 percent of the type in early seral grass and herbaceous cover, 5 to 20 percent in native herbs and shrubs, and 70 to 95 percent in dense shrubs.</p> <p>02 Chaparral is in a constant state of transition from young to older stages and back again, with fire as the primary disturbance. High-severity fires that kill most aboveground stems occur on average every 35 to 100 years. The fire return interval is long enough to allow the soil seed bank of uniquely adapted plants that follow fire to be maintained over short and long terms. Fuels are able to accumulate sufficiently in areas to carry fire in the areas of fire-adapted plants. Invasive nonnative plants do not dominate between fires.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Pinyon-juniper	<p>TERR-PINY-DC</p> <p>01 Pinyon-juniper types have a mosaic of trees and open areas that provide wildlife habitat, contribute to functional soils, and are resilient to disturbances such as fire, invasive species, insects, disease and climate change.</p> <p>TERR-PINY-GDL Sequoia NF Only</p> <p>01 Include appropriately sized patches of undisturbed vegetation in project designs to minimize nonnative species spread and maximize native species regeneration.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Blue oak woodland	TERR-BLU-DC 02 Fires occur periodically to maintain lower levels of dead grass and litter levels so that they do not fuel intense fire. Fires typically burn with low to moderate vegetation burn severity.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05
Black oak/canyon live oak	TERR-OAK-GDL 01 Where possible and appropriate to enhance forest structural heterogeneity or an underrepresented hardwood component, projects should create crown space around existing medium- to large-diameter California black oak and canyon live oak to allow crown development of the oaks. Where replacement age classes are missing, projects should create openings near mature oaks to stimulate natural regeneration or retain existing oak regeneration consistent with forest type desired conditions.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05
Chaparral-live oak	TERR-CHAP-DC 02 Chaparral is in a constant state of transition from young to older stages and back again, with fire as the primary disturbance. High severity fires that kill most aboveground stems occur on average every 35 to 100 years. Fire-return intervals allow the buildup of native shrub and plant seeds in the soil seed bank and for the accumulation of fuels necessary to support fire-induced regeneration. Invasive nonnative plants do not dominate between fires.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05
Sagebrush	TERR-SAGE-DC 01 The sagebrush type has a diversity of age classes, stand structure, cover classes and native understory composition. 02 Sagebrush ecosystems are resilient to fire and other disturbances including grazing, recreation, invasive species including cheatgrass and climate change. 03 Grazed areas have or are trending toward satisfactory soils condition, functional hydrology and biotic integrity. Sagebrush ecosystems contain all key elements and conditions, including sagebrush regeneration and recruitment, ecosystem productivity, native perennial grass and forb cover, biological soil crusts, and symbiotic fungal associations. 04 Fire occurs as a natural process within the natural range of variation, generally burning in small extents. Fires occur infrequently, generally every 40 to 80 years or longer. 05 Where nonnative annual grasses exist in sagebrush vegetation communities, the native species persist with adequate structural and functional diversity including shrubs, perennial bunchgrasses, and forbs.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05
Xeric shrub	TERR-XER-DC Sequoia National Forest Only 01 Xeric shrub vegetation is a mosaic of diverse ecological types with native shrubs and grasses, commonly sagebrush, saltbush, and goldenbush in various age classes and patch sizes. 02 Vegetation conditions are resilient to natural and human disturbances, such as grazing, flooding, fire, invasive species, and climate change. TERR-XER-STD 01 Restoration projects in xeric shrub must include design measures to minimize damage to biological soil crusts with the purpose of maintaining areas resistant to non-native plant invasions.	TERR-FW-DC 05 SPEC-FW-DC 02, 03 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Riparian habitat	<p>WTR-FW-DC</p> <p>02 Water quality supports State-designated beneficial uses of water. Water quality is sustained at a level that retains the biological, physical, and chemical integrity of aquatic systems and benefits the survival, growth, reproduction, and migration of native aquatic and riparian species.</p> <p>WTR-RCA-DC</p> <p>02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native, and desired nonnative aquatic (Sierra NF only), and riparian-dependent plant and animal species.</p> <p>06 Soil structure and function is sustained to infiltrate and disperse water properly, withstand erosive forces, sustain favorable conditions of stream flow, and cycle nutrients. Associated water tables support riparian vegetation and restrict non-riparian vegetation.</p> <p>08 The condition of riparian vegetation, including riparian species composition, stand density, and fuel loading, is consistent with healthy riparian systems and reduces risks from high-intensity wildfire in the watershed.</p> <p>WTR-RCA-STD</p> <p>10 Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems.</p> <p>12 Assess the hydrologic function of riparian areas, meadows, fens, and other special aquatic features during rangeland management analysis. Ensure that characteristics of special features are, at a minimum, at proper functioning condition or functioning at risk and trending toward proper functioning condition, as defined in appropriate technical report. If systems are functioning at risk, assess appropriate actions to move towards proper functioning condition.</p> <p>14 Designate equipment exclusion zones within riparian conservation areas when designing projects. The exclusion zone width is within 150 feet of perennial streams, meadows springs, and seeps; and 75 feet for intermittent streams. These widths will increase as slope increases, or if soils are unstable. Adjustments will be made only after consultation with experts in soils, hydrology, fisheries, and/or aquatic ecology. Any project, occurring within the exclusions zone will repair any damage, including stabilizing soils.</p> <p>WTR-RCA-GDL</p> <p>02 Water quality or habitat for aquatic and riparian-dependent species should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species should have corrective actions implemented where possible.</p> <p>05 Post-wildfire management activities should emphasize and enhance native vegetation cover, stabilize channels, reduce erosion, and minimize adverse effects from the existing road network to protect the riparian systems.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p> <p>SPEC-FW-STD</p> <p>01 Where pesticide applications are proposed within 500 feet of known occupied sites for Yosemite toad, Sierra Nevada yellow-legged frog, Mountain yellow-legged frog, and for other aquatic and riparian at-risk species, design applications to avoid adverse effects to individuals and their habitats.</p> <p>SPEC-FW-GDL</p> <p>06 Water developments (such as a diversion or well) should be avoided near streams, seeps, and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur.</p> <p>MA-CW-DC</p> <p>01 Conservation watersheds provide high-quality habitat and functionally intact ecosystems that contribute to the persistence of species of conservation concern and the recovery of threatened, endangered, proposed, or candidate species.</p>

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Same as above.	<p>06 To improve water quality or habitat for aquatic and riparian-dependent species, evaluate the impacts of facilities on riparian conservation areas when reissuing permits for livestock. If impacts are found, existing livestock facilities should be located outside of meadows and riparian areas.</p> <p>WTR-RCA-MEAD-DC</p> <p>02 Wetlands and groundwater-dependent ecosystems (including springs, seeps, fens, wet meadows, and associated wetlands or riparian systems) support stable herbaceous and woody vegetation communities that are resilient to drought, climate change, and other stressors. Root masses stabilize stream channels, shorelines, and soil surfaces. The natural hydrologic, hydraulic, and geomorphic processes in these ecosystems sustain their unique functions and biological diversity.</p> <p>05 Meadows have substantive ground cover and a rich and diverse species composition, especially of grasses and forbs. Meadows have high plant functional diversity with multiple successional functional types represented. Perennial streams in meadows contain a diversity of age classes of shrubs along the streambank, where the potential exists for these plants.</p> <p>06 A complexity of meadow habitat types and successional patterns support native plant and animal communities. Meadow species composition is predominantly native, where graminoid (grass-like) species are well represented and vigorous, and regeneration occurs naturally. Healthy stands of willow, alder, and aspen are present within and adjacent to meadows with suitable physical conditions for these species. Natural disturbances and management activities are sufficient to maintain desired vegetation structure, species diversity, and nutrient cycling.</p> <p>MA-CW-DC</p> <p>02 Conservation watersheds exhibit long-term (multiple planning cycles), high, watershed integrity and aquatic, riparian, and terrestrial ecosystems are resilient to stochastic disturbance events such as wildfires, floods, and landslides.</p> <p>04 The ecological integrity of upland vegetation is resilient and maintains soil productivity, water quality, and creates conditions to maintain or improve watershed conditions under the Watershed Condition Framework.</p>	Same as above.
Fens	<p>WTR-RCA-STD</p> <p>08 In fen ecosystems, limit disturbance from livestock and pack stock to no more than 20 percent annually. Reduce disturbance further if a fen is nonfunctional or functional at risk with a downward trend.</p> <p>10</p> <p>11 Prevent activities from causing significant degradation of fens from trampling, such as by livestock, packstock, wheeled vehicles, and people.</p> <p>12</p> <p>13 Complete initial inventories of fens within active grazing allotments prior to completing the allotment environmental analysis. If there are more than 10 fens in an allotment, complete initial inventories of at least 25 percent of all the fens in the allotment, and establish a 5-year schedule to complete inventory of the remaining fens in the allotment.</p> <p>14</p> <p>WTR-RCA-MEAD-DC 02</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 06</p> <p>MA-CW-DC 01</p>

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Ecosystem Type	Ecosystem Plan Components	Species-specific Plan Components
Springs and seeps	<p>WTR-RCA-SPR-DC</p> <p>01 Springs provide sufficient water to maintain healthy habitats for native riparian and aquatic species.</p> <p>03 Springs and associated streams and wetlands have the necessary soil, water, and vegetation attributes to be healthy and functioning at or near potential. Water flow is similar to historic levels and persists over time, within constraints of climate change.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Lakes, ponds	<p>WTR-RCA-LPP-DC</p> <p>01 Lakes and ponds retain necessary attributes, such as adequate vegetation and large woody debris to function properly and support native biotic communities. Attributes include floodwater retention and groundwater recharge, stabilized islands and shoreline features, and diverse characteristics to provide for amphibian production, waterfowl breeding, and biodiversity.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02, 03</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>

Threats Crosswalk

Table D-42. Crosswalk between plant species of conservation concern and key threats with primary plan components that provide for persistence

Threat	Ecosystem Plan Components	Species-specific Plan Components
Altered fire regime	<p>TERR-FW-DC</p> <p>02 Vegetation structure and composition provide ecosystem resilience to climate change and other stressors including altered fire regimes, drought, and flooding in riparian systems.</p> <p>08 Fire occurs as a key ecological process in fire-adapted ecosystems where it does not pose an unacceptable risk to life and property. Fire regimes, including the frequency, extent, and severity of fire, is ecologically appropriate and enhances ecosystem resilience and habitat heterogeneity, diversity, and quality.</p> <p>TERR-FW-OBJ</p> <p>01 Sequoia NF Restore forest structure and composition on at least 10,000 acres of the montane, upper montane, and portions of the foothill landscape, using primarily mechanical treatment, within 15 years following plan approval</p> <p>01 Sierra NF Restore forest structure and composition on at least 10,000 – 20,000 acres of the montane, upper montane, and portions of the foothill landscapes, using primarily mechanical treatment, within 15 years following plan approval.</p> <p>02 Sequoia NF Restore low and moderate severity fire mosaics on at least 25,000 acres within 15 years following plan approval.</p> <p>02 Sierra NF Restore low and moderate severity fire mosaics on at least 50,000 acres within 15 years following plan approval.</p> <p>04 Within 10 to 15 years following plan approval and within the Wildlife Habitat Management Area, restore up to 20 percent of the area to resilient condition and/or within the natural range of variation. Focus restoration on areas identified as outside of natural range of variation, and those with potential to negatively influence resilience of high quality wildlife habitat. Strategically link treatments and restoration activities within the Wildlife Habitat Management Area to treatments occurring on adjacent community wildfire protect zone and private lands as feasible.</p> <p>Outside of the Wildlife Habitat Management Area and community wildfire protect zone, increase forest heterogeneity, reduce forest density and surface fuels, and restore species composition increase black oak and pine on at least 20 percent of the area of mixed conifer, ponderosa pine, Jeffrey pine, and portions of the foothill landscape i.e., oak woodlands where intermixed with ponderosa pine forests that are outside of the natural range of variation, within 10 to 15 years following plan approval.</p> <p>FIRE-FW-DC</p> <p>04 Wildland fires burn with a range of intensity, severity and frequency that allow ecosystems to function in a healthy and sustainable manner. Wildland fire is understood as a necessary process, integral to the sustainability of fire-adapted ecosystems and is used as an effective restoration tool see TERR-FW-DC related to fire. The landscape is strategically compartmentalized by treated areas and natural features, which facilitates use of prescribed fire and wildfire to meet resource objectives for protecting values and resources.</p> <p>FIRE-FW-GOAL</p> <p>04 Restore ecosystems to a more fire-resilient condition and lessen the threat of wildfire to communities.</p>	<p>TERR-FW-DC</p> <p>05 Ecological conditions contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and support the persistence of species of conservation concern.</p> <p>SPEC-FW-DC</p> <p>02 Ecological conditions for at-risk species support self-sustaining populations within the inherent capabilities of the plan area, including minimizing impacts from threats such as disease and other site-specific threats. Ecological conditions provide habitat conditions that contribute to the survival, recovery, and delisting of species under the Endangered Species Act; preclude the need for listing new species; and improve conditions for species of conservation concern.</p> <p>03 The structure and function of the vegetation, aquatic and riparian system, and associated microclimate and smaller scale elements of special habitats like special features such as carbonate rock outcrops exist in adequate quantities within the capability of the plan area to provide habitat and refugia for at-risk species with restricted distributions.</p> <p>SPEC-FW-GOAL</p> <p>03 Work with the California Department of Fish and Wildlife following the memoranda of understanding and U.S. Fish and Wildlife Service to restore and maintain essential habitat for at-risk species and implement other recovery actions according to species recovery plans.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Threat	Ecosystem Plan Components	Species-specific Plan Components
<i>Same as above.</i>	<p>FIRE-FW-STD</p> <p>02 If fire management actions are required within designated wilderness areas, research natural areas, botanical areas, giant sequoia groves, or the Pacific Crest National Scenic Trail management area:</p> <ul style="list-style-type: none"> • Apply minimum impact strategies and tactics to manage wildland fire, unless more direct attack is needed to protect people or adjacent property. • When possible, allow naturally ignited wildfires to function in their natural role. <p>In cases where fire may damage the ecological values for which a research natural area was established, measures should be taken to exclude fire from the research natural area.</p> <p>FIRE-FW-GDL</p> <p>01 Use naturally ignited and prescribed wildland fires to meet multiple resource management objectives, where and when conditions permit and risk is within acceptable limits.</p> <p>03 When managing wildland fire, allow fire to burn in riparian ecosystems when fire effects are expected to be within the natural range for the ecosystem to improve riparian ecosystem function.</p>	<i>Same as above.</i>
Climate change	<p>TERR-FW-DC</p> <p>02 Vegetation structure and composition provide ecosystem resilience to climate change and other stressors including altered fire regimes, drought, and flooding in riparian systems.</p> <p>TERR-ALPN-DC</p> <p>05 Alpine ecosystems are resilient to climate change, and fires are small and occur infrequently.</p> <p>TERR-MONT-DC 01</p> <p>TERR-PINY-DC 01</p> <p>WTR-FW-DC</p> <p>01 Adequate quantity and timing of water flows support ecological structure and functions, including aquatic species diversity and riparian vegetation. Watersheds are resilient to changes in air temperatures, snowpack, timing of runoff, and other effects of climate change.</p> <p>WTR-FW-GOAL</p> <p>02 Take a landscape- or watershed-scale approach to restoring aquatic and riparian ecosystems, integrating with recreation, range management, fuels, and vegetation management in order to efficiently use limited resources, including partnerships, and to effectively address climate change.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02 & 03</p> <p>SPEC-FW-GOAL 03</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Threat	Ecosystem Plan Components	Species-specific Plan Components
Erosion/soil degradation	<p>MA-CW-DC</p> <p>04 The ecological integrity of upland vegetation is resilient and maintains soil productivity, water quality, and creates conditions to maintain or improve watershed conditions under the Watershed Condition Framework</p> <p>WTR-RCA-DC</p> <p>06 Soil structure and function is sustained to infiltrate and disperse water properly, withstand erosive forces, sustain favorable conditions of stream flow, and cycle nutrients. Associated water tables support riparian vegetation and restrict nonriparian vegetation.</p> <p>WTR-RCA-STD</p> <p>14 Limit construction of new skid trails or temporary roads for access into riparian conservation areas unless it is the only feasible option to conduct restoration activities for improvement of riparian conservation areas. When conducting restoration activities for protection or improvement of riparian conservation areas, best management practices for erosion must be followed to prevent soil loss.</p> <p>15 Designate equipment exclusion zones within riparian conservation areas when designing projects. The exclusion zone width is within 150 feet of perennial streams, meadows springs, and seeps; and 75 feet for intermittent streams. These widths will increase as slope increases, or if soils are unstable. Adjustments will be made only after consultation with experts in soils, hydrology, fisheries, and/or aquatic ecology. Any project, occurring within the exclusions zone will repair any damage, including stabilizing soils.</p> <p>WTR-RCA-GDL</p> <p>04 To limit soil disturbance in riparian conservation areas, activities should use methods that limit soil disturbance to less than 20 percent such as low ground pressure equipment, helicopters, over-snow logging, extra ground cover requirements, or other non-ground disturbing actions to achieve desired conditions consistent with best management practices and plan direction.</p> <p>WTR-RCA-MEAD-DC</p> <p>02 Wetlands and groundwater-dependent ecosystems including springs, seeps, fens, wet meadows, and associated wetlands or riparian systems support stable herbaceous and woody vegetation communities that are resilient to drought, climate change, and other stressors. Root masses stabilize stream channels, shorelines, and soil surfaces. The natural hydrologic, hydraulic, and geomorphic processes in these ecosystems sustain their unique functions and biological diversity.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p> <p>SPEC-FW-GDL</p> <p>01 Design features, mitigation, and project timing considerations should be incorporated into projects that may affect habitat for at-risk species where they occur to minimize impacts to ecological conditions that provide for the persistence of at-risk species.</p> <p>05 Habitat management objectives or goals from approved conservation strategies or agreements should be incorporated, if appropriate, in the design of projects that will occur within at-risk species habitat.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Threat	Ecosystem Plan Components	Species-specific Plan Components
Fuels and/or Vegetation treatments	<p>FIRE-FW-DC</p> <p>02 Fire management activities reduce fuel buildup, help maintain and protect habitat for a variety of species, reduce smoke from larger fires, provide added protection for communities, and restore fire on the landscape. These actions are also an integral part of achieving sustainable recreation, particularly by maintaining scenic attractiveness, integrity, and character.</p> <p>04 Wildland fires burn with a range of intensity, severity and frequency that allow ecosystems to function in a healthy and sustainable manner. Wildland fire is understood as a necessary process, integral to the sustainability of fire-adapted ecosystems and is used as an effective restoration tool see TERR-FW-DC related to fire. The landscape is strategically compartmentalized by treated areas and natural features, which facilitates use of prescribed fire and wildfire to meet resource objectives for protecting values and resources.</p> <p>FIRE-FW-STD</p> <p>02 If fire management actions are required within designated wilderness areas, research natural areas, botanical areas, giant sequoia groves, or the Pacific Crest National Scenic Trail management area:</p> <ul style="list-style-type: none"> • Apply minimum impact strategies and tactics to manage wildland fire, unless more direct attack is needed to protect people or adjacent property. • When possible, allow naturally ignited wildfires to function in their natural role. <p>In cases where fire may damage the ecological values for which a research natural area was established, measures should be taken to exclude fire from the research natural area.</p> <p>FIRE-FW-GDL</p> <p>03 When managing wildland fire, allow fire to burn in riparian ecosystems when fire effects are expected to be within the natural range for the ecosystem to improve riparian ecosystem function.</p> <p>FIRE-FW-GDL</p> <p>04 Where possible during wildland fire management activities, locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside of riparian conservation areas to avoid impacts to aquatic- and riparian-dependent resources.</p> <p>FIRE-GWPZ-GOAL</p> <p>01 Protect natural resources from the negative impacts of wildfire and prevent direct threats to life or property in nearby communities.</p> <p>FIRE-WRZ-STD</p> <p>01 Use natural barriers and features like creeks, old fire footprints, ridges and man-made lines such as roads and trails when managing wildfires to meet resource objectives, unless unsafe or impractical.</p> <p>TIMB-FW-DC</p> <p>02 Production of timber contributes to ecological, social, and economic sustainability and associated desired conditions. A sustainable mix of forest products including both sawtimber and non-sawtimber is offered under a variety of harvest and contract methods in response to market demand and restoration needs.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p> <p>FIRE-FW-GDL</p> <p>05 During wildfires, avoid fire management activities in special habitats see Terrestrial section, chapter 2 except when necessary to protect life and property. This includes activities such as line construction, staging areas, safety zones, water drafting, and camps. When fire management activities near special habitats are necessary, take extra measures to avoid spread of invasive plants.</p>
Horticultural collection	N/A ¹³	N/A

¹³ The collection or taking of plant species of conservation concern is prohibited except as authorized by regional policy.

Appendix D. Persistence Analysis for Species of Conservation Concern

Threat	Ecosystem Plan Components	Species-specific Plan Components
Hydrological alteration	<p>WTR-FW-DC 01 WTR-FW-DC</p> <p>03 Watersheds are fully functioning or trending toward fully functioning and resilient; recover from natural and human disturbances at a rate appropriate with the capability of the site; and have a high degree of hydrologic connectivity laterally across the floodplain and valley bottom and vertically between surface and subsurface flows. Physical geomorphic, hydrologic connectivity and associated surface processes such as runoff, flooding, in-stream flow regime, erosion, and sedimentation are maintained and restored. Watersheds provide important ecosystem services such as high-quality water, recharge of streams and shallow groundwater, and maintenance of riparian communities. Watersheds sustain long-term soil productivity.</p> <p>WTR-FW-STD</p> <p>01 Use best management practices as described in agency technical guides and handbooks to mitigate adverse impacts to soil and water resources during the planning and implementation of forest management activities.</p> <p>02 Restoration projects will not result in long-term degradation of aquatic and riparian conditions, including connectivity, at the watershed or subwatershed scale. Adverse effects from project activities are acceptable when they are short-term, site-scale, and support, or do not diminish, long-term recovery of aquatic and riparian resources.</p>	<p>TERR-FW-DC 05 SPEC-FW-DC 02 & 3 SPEC-FW-GOAL 03 SPEC-FW-STD 01 SPEC-FW-GDL 01 & 05 SPEC-FW-GDL</p> <p>06 Water developments such as a diversion or well should be avoided near streams, seeps, and springs where there is high risk of dewatering aquatic and riparian habitats where at-risk species occur.</p> <p>WTR-RCA-DC</p> <p>02 Riparian conservation areas have ecological conditions that contribute to the recovery of threatened and endangered species and support persistence of species of conservation concern as well as native and desired nonnative aquatic and riparian-dependent plant and animal species.</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Threat	Ecosystem Plan Components	Species-specific Plan Components
Invasive species	<p>INV-FW-DC</p> <p>01 Terrestrial and aquatic invasive species are controlled or eradicated when possible, and establishment of new populations is prevented.</p> <p>02 The area affected by invasive species and introduction of new invasive species is minimized.</p> <p>INV-FW-GOAL</p> <p>01 Coordinate and cooperate with local, State and Federal agencies and Tribes to manage and control invasive and nonnative species.</p> <p>TERR-PINY-GDL</p> <p>01 Sequoia NF Only Include appropriately sized patches of undisturbed vegetation in project designs to minimize nonnative species spread and maximize native species regeneration.</p> <p>INV-FW-STD</p> <p>02 Hay, straw, and other crop-related forage or mulch products used for animal feed or bedding, soil stabilization land rehabilitation, or other purposes must be certified by California or Nevada and/or to the North American Invasive Species Management Association standards as being weed-free to prevent unintentional introduction of invasive species unless in consultation with the Forest Service invasive species coordinator it is determined that certified weed-free material is not reasonably available.</p> <p>03 Use an integrated pest management approach in the planning and implementation of all projects and activities.</p> <p>04 When entering or exiting project sites, wash heavy equipment to prevent the spread of invasive species.</p> <p>INV-FW-GDL</p> <p>01 Projects should be designed to minimize invasive species spread by incorporating prevention and control measures into ongoing management or maintenance activities that involve ground disturbance, terrestrial or aquatic habitat alteration, or the possibility of spreading invasive species. When feasible, projects should include measures to use invasive species-free gravel, fill, and topsoil; and include follow-up inspections as needed and specified in regional or national strategies.</p> <p>02 To the extent feasible, plant and seed materials used for revegetation, restoration, and rehabilitation projects should be native, genetically appropriate to the site, disease free, and capable of becoming established to restore natural species composition and ecosystem function.</p> <p>03 Weed control and prevention measures should be included as necessary when issuing, amending or reissuing permits, including but not limited to livestock grazing, special uses, and pack stock operator permits.</p> <p>FIRE-FW-GDL</p> <p>06 When conducting fire management activities, take appropriate measures to prevent the spread of invasive species.</p> <p>WTR-RCA-GOAL</p> <p>02 Where invasive species are adversely affecting the persistence of native species, work with the appropriate State and Federal wildlife agencies work to reduce impacts of invasive species to native populations.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Threat	Ecosystem Plan Components	Species-specific Plan Components
Livestock grazing	<p>RANG-FW-DC</p> <p>01 Rangelands, along with grazable forestlands and woodlands, provide large areas of contiguous space supporting native and desired nonnative vegetation that has the potential to be grazed. These ranges sustain biological diversity and ecological processes and help to preserve the rural landscape and cultural heritage of the central, southern and eastern Sierra Nevada.</p> <p>02 Livestock grazing is managed to meet or move towards the desired vegetation condition represented by diverse plant functional groups, species richness and diversity, and structure and condition of plant communities.</p> <p>03 Manage rangelands to maintain or restore hydrologic function and soil productivity of watersheds. Livestock grazing is managed to accommodate the maintenance or restoration of aquatic and riparian processes and functions.</p> <p>RANG-FW-STD</p> <p>01 Manage livestock grazing to attain desired conditions in blue oak-interior live oak woodlands, annual grasslands, aspen, special habitats, great gray owl protected activity areas, occupied willow flycatcher habitat, and riparian conservation areas. Where livestock grazing is found to prevent or retard attainment of desired conditions, modify grazing practices such as number of livestock, timing, scheduled rest, and range structures. If adjusting practices is not effective, remove livestock from the area using appropriate administrative authorities and procedures.</p> <p>RANG-FW-STD</p> <p>04 If meadow ecological status is determined to be moving in a downward trend due to grazing, modify or suspend grazing. Management of meadows that are in low ecological status or not in proper functioning condition and have active erosion will be modified to achieve or show substantial progress toward meeting mid- or late seral status and proper functioning condition within 5 years.</p> <p>WTR-RCA-GDL</p> <p>02 Water quality or habitat for aquatic and riparian-dependent species should be maintained or restored. Roads, trails, off-highway vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species should have corrective actions implemented where possible.</p>	<p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-GDL 01 & 05</p>
Mining	<p>GEO-FW-DC</p> <p>01 Mineral resources on National Forest System lands provide for public benefit, while minimizing adverse environmental effects on other forest resources from mineral exploration, development, and extraction.</p>	<p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GDL 01 & 05</p>

Appendix D. Persistence Analysis for Species of Conservation Concern

Threat	Ecosystem Plan Components	Species-specific Plan Components
Recreation, including trampling and trail maintenance	<p>REC-FW-DC</p> <p>05 Sequoia NF Recreation activities in the national forest have minimal impact on sensitive environments and resources, and complement the management intent of designated areas and other resources.</p> <p>05 Sierra NF Areas of the national forest provide for a variety of activities with minimal impact on sensitive environments and resources.</p> <p>06 Visitors can connect with nature, culture, and history through a range of sustainable outdoor recreation opportunities, and are committed to resource stewardship.</p> <p>07 The management and operation of facilities are place based, integrated with other resources, and responsive to changing environmental, social, and economic conditions that may limit or alter access.</p> <p>08 New developed recreation infrastructure is located in ecologically resilient landscapes, is economically sustainable, and responsive to public needs.</p> <p>09 Sequoia NF Camping outside of developed facilities does not adversely impact natural or cultural resources, lower the natural character of the landscape, is economically sustainable and can be effectively and sustainably managed for public health and safety.</p> <p>09 Sierra NF Dispersed recreation occurs in areas outside of high visitation, developed facilities, or communities, and does not adversely impact natural or cultural resources.</p> <p>10 Permitted recreation uses, such as recreation special events or guided activities, are consistent with recreation settings, protect natural and cultural resources, and contribute to the economic sustainability of local communities.</p> <p>13 A sustainable system of trails provides access to destinations, provides for opportunities that connect to a larger trail system, provides linkages from local communities to the national forest, and is planned, designed and managed to be compatible with other resources.</p> <p>REC-FW-GOAL</p> <p>02 Manage dispersed recreation activities when evidence of impacts to natural resources emerge or are causing damage.</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p> <p>REC-FW-GDL</p> <p>01 When locating new recreation facilities, do not adversely affect environmentally and culturally sensitive areas, such as at-risk species breeding habitat or at-risk plant species habitat.</p> <p>03 Use integrated resource planning when designing projects to address impacts to culturally sensitive areas and at-risk species habitat, and to address changing conditions in recreation settings.</p> <p>DA-WILD-DC</p> <p>07 National Forest System trails that access wilderness are part of a high-quality wilderness experience for visitors. National Forest System trails meet national quality standards, with minimal deferred maintenance and adhere to the national trail classification system. Trails in wilderness are located in resilient areas, and do not cause adverse impacts to at-risk species, water quality, soils, hydrologic connectivity, or cultural resources.</p>
Road maintenance	<p>INFR-FW-DC</p> <p>01 Forest infrastructure, such as roads, buildings, campgrounds, water systems and bridges, is managed to provide for the planned use and protection of resources, and is maintained for health and safety</p> <p>05 Infrastructure (administrative sites, recreation facilities, and roads) has minimal adverse effects to riparian and aquatic resources</p> <p>WTR-RCA-STD 14</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>
Unauthorized OHV travel	<p>The authorized motorized route system was developed under the Travel Management Rule. Unauthorized OHV travel is handled through law enforcement.</p> <p>INFR-FW-DC 01, 04</p>	<p>TERR-FW-DC 05</p> <p>SPEC-FW-DC 02 & 3</p> <p>SPEC-FW-GOAL 03</p> <p>SPEC-FW-STD 01</p> <p>SPEC-FW-GDL 01 & 05</p>

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Appendix E

Rangeland Management

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Appendix E.

Rangeland Management

Status of Livestock Production Rangelands – Sequoia National Forest

As of 2018, 689,841 acres were available for livestock grazing on the Sequoia National Forest outside of Giant Sequoia National Monument (GSNM) (Figure E-1). Of these, 9 allotments (195,880 acres) were either vacant or in nonuse for resource protection. The remaining acres (493,961 acres) were being grazed by cattle (Table E-1). Determinations of the status of livestock grazing allotments, changes in livestock class, season of use, timing of use, and established utilization standards, are all determined during project-level environmental analysis. The plan components found in the forest plan are used as a baseline for determining utilization standards at the project-level. Vacant allotments would need project-level environmental analysis prior to reactivation. Refer to the 2012 Giant Sequoia Monument Plan regarding allotments within the monument.

Table E-1. Summary data of current grazing allotments for the Sequoia National Forest plan area

ID	Allotment	Kind/Class	Status	Acres
1007	West Trimmer	Cattle	Active	1,323
1009	Oat Mountain/Lefever	Cattle	Active	7,942
1011	Greeley	Cattle	Active	146
2021	Little Kern	Cattle	Active	43,489
3024	Dunlap	Cattle	Active	17,131
4031	Nicolls Peak	Cattle	Active	28,649
4032	Cedar Creek	Cattle	Active	29,691
4034	Fulton	Cattle	Active	101
4036	Cow Flat	Cattle	Active	18,205
4037	Delonegha	Cattle	Active	2,249
4038	Little Poso	Cattle	Active	7,002
4039	Sandy Creek	Cattle	Active	2,006
4040	Oak Flat	Cattle	Active	9,406
4041	Pechacho	Cattle	Active	6,060
4042	Wagy Flat	Cattle	Active	21,247
4043	Breckenridge	Cattle	Active	12,599
4044	Sycamore	Cattle	Active	3,549
4045	Piute	Cattle	Active	29,229
4046	Lumreau	Cattle	Active	4,237
6049	Bartolas	Cattle	Active	43,914
6051	Cannell	Cattle	Active	64,186
6055	Fish Creek	Cattle	Active	76,809
6057	Scodie	Cattle	Active	17,677
6060	Potato Patch	Cattle	Active	15,709
4061	Hobo Ridge	Cattle	Active	4,946

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ID	Allotment	Kind/Class	Status	Acres
4063	Loco Bill Canyon	Cattle	Active	3,214
6068	Lake Isabella	Cattle	Active	6,084
1004	Horse Corral	Cattle	Active	5,670
1005	Sampson	Cattle	Active	5,375
3027	Rube	Cattle	Active	58
0513	Sequoia National Forest	Subtotal	Active	493,961
1010	White Deer	Cattle	Vacant	10,052
4030	Prefedio	Cattle	Vacant	2,678
6050	A. Brown	Cattle	Vacant	36,748
6052	Beach	Cattle	Vacant	35,574
6053	Chico	Cattle	Vacant	27,386
6054	Smith Canyon	Cattle	Vacant	15,132
6056	Burnt Country	Cattle	Vacant	53,475
6058	Jacks Creek	Cattle	Vacant	12,481
4064	Borel Allotment	Cattle	Vacant	2,354
0513	Sequoia National Forest	Subtotal	Vacant	195,880
0515	Sequoia National Forest	Total Suitable	Active & Vacant Allotments	689,841

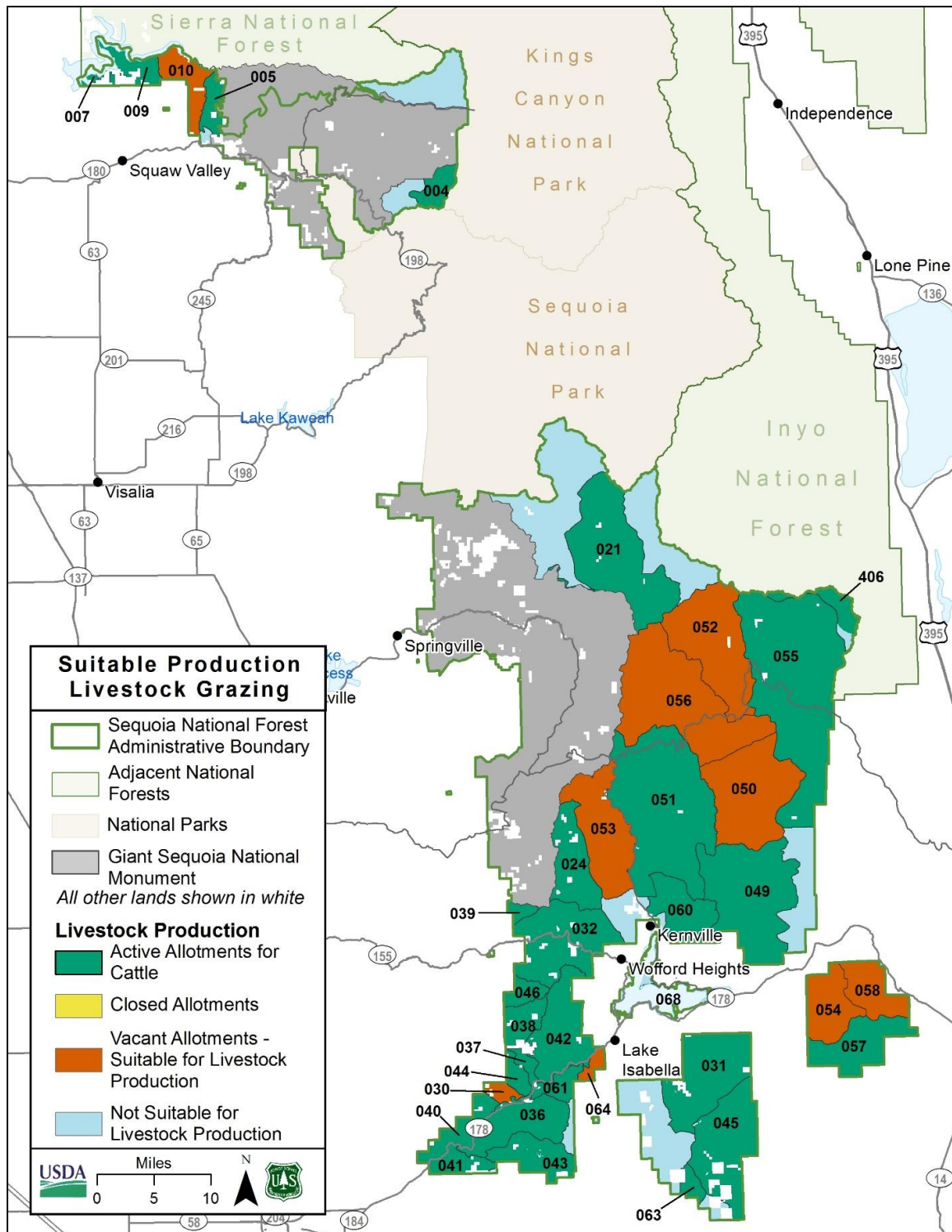


Figure E-1. Range Allotments on the Sequoia National Forest Plan Area showing active (dark green), vacant (orange), and closed (yellow) allotments. Unsuitable lands within the plan Area are marked in light blue.

Status of Livestock Production Rangelands – Sierra National Forest

As of 2018, 908,027 acres were available for livestock grazing on the Sierra National Forest. Of these, 7 allotments (157,543 acres) were either vacant or in nonuse for resource protection (see Figure E-2). The remaining acres (750,484 acres) were being grazed by cattle (Table E-2).

Determinations of the status of livestock grazing allotments, changes in livestock class, season of use, timing of use, and established utilization standards, are all determined during project-level environmental analysis. The plan components found in the forest plan are used as a baseline for determining utilization standards at the project-level. Vacant allotments would need project-level environmental analysis prior to reactivation.

Table E-2. Summary data of current grazing allotments, Sierra National Forest

ID	Allotment	Kind/Class	Status	Acres
527	Beasore	Cattle	Active	10,124
401	Billy Creek	Cattle	Active	3,463
317	Blasingame	Cattle	Active	50,851
403	Blue Canyon	Cattle	Active	15,273
319	Cassidy	Cattle	Active	55,077
523	Castle Peak	Cattle	Active	11,893
525	Central Camp	Cattle	Active	25,878
526	Chiquito	Cattle	Active	49,370
001	Clark Site	Cattle	Active	158
410	Collins	Cattle	Active	26,053
408	Dinkey	Cattle	Active	65,851
524	Haskell	Cattle	Active	32,324
404	Haslett Basin	Cattle	Active	5,174
131	Iron Creek	Cattle	Active	22,986
315	Kaiser	Cattle	Active	38,847
522	Long Ridge	Cattle	Active	6,646
321	Markwood	Cattle	Active	1,756
318	Mono	Cattle	Active	37,296
316	Mt Tom	Cattle	Active	66,304
528	Mugler	Cattle	Active	19,129
311	Patterson Bend	Cattle	Active	2,455
407	Patterson Mountain	Cattle	Active	55,756
130	Soquel	Cattle	Active	44,814
529	South Jackass	Cattle	Active	41,392
313	Sugarloaf	Cattle	Active	1,968
402	Sycamore	Cattle	Active	38,273
405	Thompson	Cattle	Active	19,664
0515	Sierra National Forest	Subtotal	Active	750,484
406	Rodgers Ridge	Cattle	Vacant	10,897
134	Sweetwater	Cattle	Vacant	18,994

Appendix E. Rangeland Management

ID	Allotment	Kind/Class	Status	Acres
133	Chowchilla	Cattle	Vacant	50,391
320	Hot Springs	Cattle	Vacant	15,352
314	Jose	Cattle	Vacant	25,251
132	Miami	Cattle	Vacant	676
547	North Jackass	Cattle	Vacant	35,786
0515	Sierra National Forest	Subtotal	Vacant	157,543
136	77 Corral	none	Closed	17,941
339	Bear	none	Closed	34,952
449	Black Cap	none	Closed	12,704
444	Crown Valley	none	Closed	27,707
341	Florence	none	Closed	39,001
337	Minnow	none	Closed	13,979
135	Pinoche	none	Closed	20,827
442	Red Mountain	none	Closed	9,540
338	Upper Mono	none	Closed	33,768
546	Dike Creek	none	Closed	16,820
409	Helms	none	Closed	25,189
340	Piute	none	Closed	35,370
445	Post Corral	none	Closed	39,794
0515	Sierra National Forest	Subtotal	Closed	327,592
0515	Sierra National Forest	Total	All Allotments	1,235,619
0515	Sierra National Forest	Total Suitable	Active & Vacant Allotments	908,027

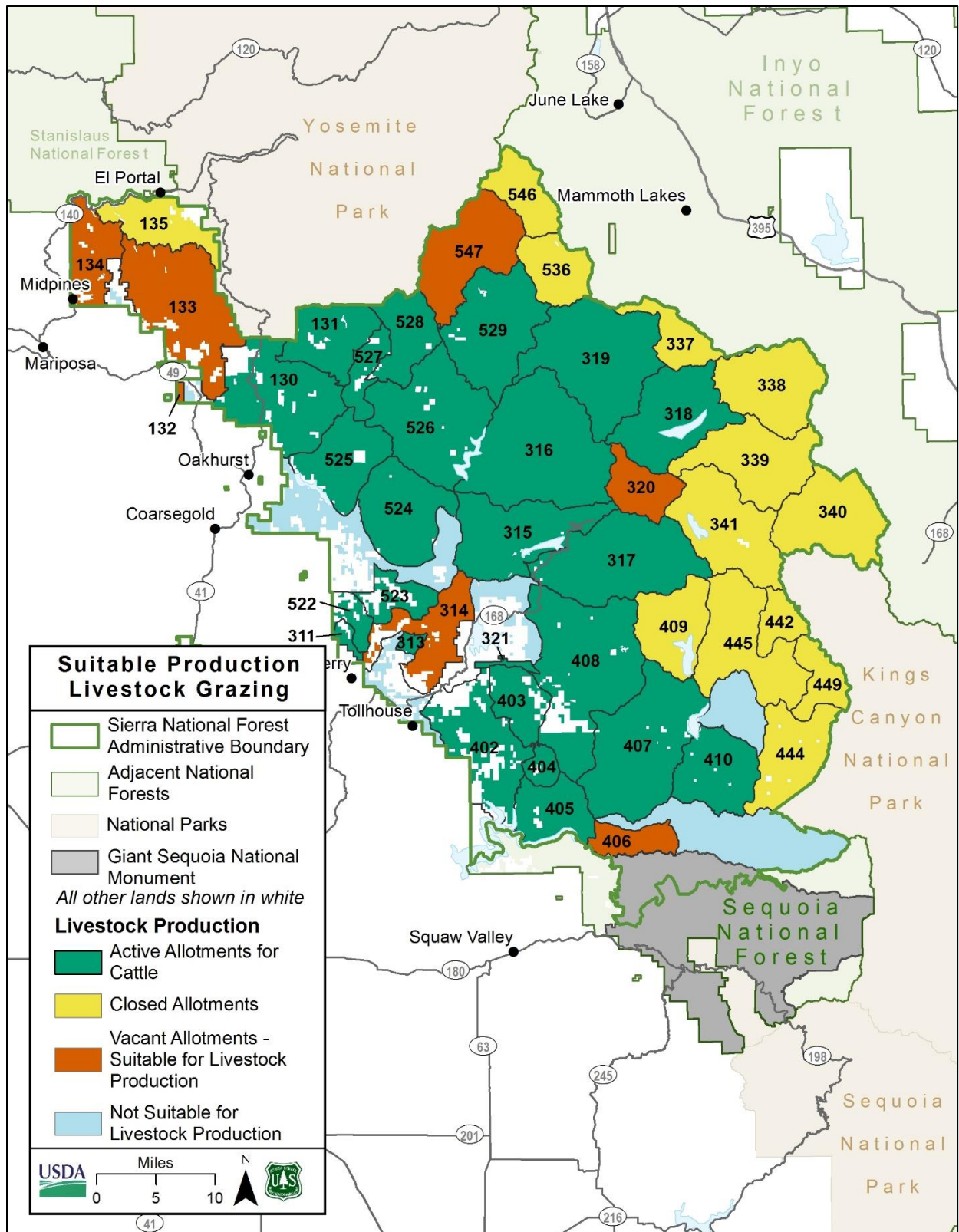


Figure E-2. Range Allotments on the Sierra National Forest Plan Area showing active (dark green), vacant (orange), and closed (yellow) allotments. Unsuitable lands within the plan Area are marked in light blue.

Appendix F

Timber Suitability and Management

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Appendix F.

Timber Suitability and Management

Determination of Suitability for Timber Production

Timber production is the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19). Timber production activities can contribute to social, economic, and ecological sustainability. Timber production may offset some or all of the costs of silvicultural treatments and other forest management activities that restore ecosystems to desired conditions, lower uncharacteristic fire and insect risk, increase understory plant diversity and abundance, and create employment opportunities.

The National Forest Management Act requires that the agency determine the suitability of National Forest System lands for timber production and has specific requirements for timber suitability analysis in land management plans. Note that there is a distinction between timber harvest as a resource use (that is, timber production) and timber harvest as a management tool to achieve desired conditions. Timber harvest on lands classified as not suitable for timber production may be utilized as a tool designed to achieve desired conditions.

Lands that May be Suitable for Timber Production

Identification of land that may be (tentatively) suitable for timber production is the first step in the process of determining lands that are suited for timber production. This preliminary classification is made prior to the consideration of objectives and desired conditions considered as part of the forest plan revision process, and excludes National Forest System lands that are not suitable for timber production based on the following criteria:

- Timber production is prohibited by statute, executive order, regulation or where the Secretary of Agriculture or the Chief of the Forest Service has withdrawn the land from timber production. Examples include designated wilderness areas, designated wild river segments, research natural areas or other designated areas where timber production is specifically prohibited.
- Land that is not forested (nonforest), identified by having less than 10 percent occupation by conifer trees of any size or having a nonforest use (powerline clearings, residential or administrative sites, and improved pasture).
- Known environmental factors exist that preclude reasonable assurance that restocking can be achieved within 5 years of final regeneration harvest.
- Technology to harvest timber is not currently available without causing irreversible damage.

Forest lands that remain after this initial screening are termed “lands that may be suitable for timber production,” and typically do not vary by alternative. Based on this initial suitability analysis, the southern Sierra Forests include approximately 514,000 acres (Sequoia National Forest has 134,436 acres; Sierra National Forest has 379, 157 to 380,607 acres, depending on alternative) that may be suitable for timber production as shown in Item C on the last row of

Table F-1. The reason why the lands that may be suitable for timber production vary across alternatives for the Sierra National Forest is explained below.

Table F-1. Acres of National Forest System lands that may be suitable for timber production

Land Classification Category	Sequoia NF	Sierra NF		
	All Alternatives	Alternative A	Alternatives B and D	Alternatives C and E
A. Total National Forest System land	1,114,736	1,316,192	1,316,192	1,316,192
B. Lands not suited for timber production due to legal or technical reasons	980,300	935,585	936,076	937,035
a. Land withdrawn from timber production	869,658	733,886	734,390	735,439
b. Nonforested lands and/or lands where adequate stocking is not assured	110,642	201,699	201,687	201,596
c. Lands where irreversible resource damage is likely	0	0	0	0
C. Lands that may be suited for timber production	134,436	380,607	380,116	379,157

If present, the following areas were considered withdrawn from timber production: national wilderness areas, national scenic areas, national scenic research areas, national wild and scenic rivers, research natural areas, national recreation areas, national game refuges and wildlife preserves, national monument areas, national volcanic monument areas, national historic areas, national protection areas, special management areas, national botanical areas, recreation management areas, scenic recreation areas, scenic wildlife areas, national scenic trails, national historic trails, research and experimental areas, national recreation trails, national primitive areas, special interest areas, giant sequoia groves, and inventoried roadless areas.

A few points should be noted with respect to lands withdrawn (legally) from timber production for these two forests. While the total acreage listed for the Sequoia National Forest includes the Giant Sequoia National Monument, those lands were withdrawn from timber production by the presidential proclamation that designated the monument. For the Sierra National Forest, one can see that the land area withdrawn from timber production varies among some of the alternatives. This is due to a 1992 presidential proclamation that withdrew all giant sequoia groves from timber production. As this proclamation came after the Sierra National Forest's Plan was published, these withdrawals are not shown for alternative A. Alternatives B and D employ one method for delineating these groves, while alternatives C and E use a different method, although both methods are consistent with the 1992 presidential proclamation. This results in different acreages that may be suitable for timber production among alternatives for the Sierra National Forest. Acreage that may be suitable for timber production does not vary among alternatives for the Sequoia National Forest, where all giant sequoia groves were withdrawn from timber production with the establishment of the Giant Sequoia National Monument.

As stated above, nonforested lands are described as lands having less than 10 percent occupation by conifer trees or lands having a nonforest use (powerline clearings, residential or administrative sites, and improved pasture). This was represented using 10 percent canopy cover as identified in the “Existing Vegetation” corporate geographic information system data layer.

The following Regional Dominance Types (CALVEG Forest Types) are recognized as capable of adequate restocking within 5 years: Giant Sequoia, Pacific Douglas-fir, Douglas-fir-Ponderosa Pine, Eastside Pine, Jeffrey Pine, Mixed Conifer-Giant Sequoia, Incense Cedar, Mixed Conifer-Fir, Mixed Conifer-Pine, Ponderosa Pine, Red Fir, and White Fir. All other CALVEG Forest Types within the, Sierra, and Sequoia National Forests are currently regarded as not capable of the same level of reasonable assurance and are excluded. In addition, for the Sequoia and Sierra National Forests, mapping units characterized by soil depths less than 10 inches, or by available water content less than 1.2 inches (based on Order 3 soil survey data) are excluded.

Lands Suitable for Timber Production

The final step in determining lands suitable for timber production is to determine which of the lands that may be suitable for timber production are suited for timber production. The following land categories have objectives or desired conditions that are not compatible with timber production and are not suitable.

- Recommended wilderness areas included in each alternative.
- The corridor (approximately one quarter-mile on each side) surrounding wild river segments of eligible wild and scenic rivers.
- Areas identified as valuable California spotted owl habitat are as follows: Alternatives A, B, and D recognized California spotted owl protected activity centers, while alternatives C and E recognized the California spotted owl home range core area. Home range core area is used as a proxy for high-value forested habitat in California spotted owl territories, and does include protected activity centers. The row is labeled protected activity centers in the tables, but note that this applies to home range core areas for alternatives C and E.
- Riparian conservation areas (RCA), including RCA for perennial, intermittent, and ephemeral streams, plus special aquatic features for Alternatives B, C, and E. RCA for perennial and intermittent streams, plus special aquatic features for Alternative D.
- Backcountry Management Areas for Alternative E.

The remaining lands meet the following criteria and are defined as suitable for timber production.

- Timber production is a desired primary or secondary use of the land.
- Timber production is anticipated to continue after desired conditions have been achieved.
- A flow of timber can be planned and scheduled on a reasonably predictable basis.
- Regeneration of the stand is intended.
- Timber production is compatible with the desired conditions or objectives for the land.

On lands not identified as suitable for timber production, harvest may still occur to protect multiple-use values, other than timber production. Common examples include salvage, sanitation, public health, or safety, but may also include various other restoration activities. For example,

meadow restoration may require cutting encroaching trees, or reestablishing pine component might require group selection regeneration harvests to provide adequate seedbed and light conditions. These activities may produce timber as a byproduct, but the area would be treated to achieve objectives other than timber production and the area would not be identified as part of the suitable land base.

The southern Sierra Nevada Forests include approximately 131,00 to 456,00 acres that are suitable for timber production, depending on alternative (see Table F-2 and Table F-3 for national forest-specific information; Table F-4 for summary data for all two national forests). Lands suitable for timber production are lands where this use is a management objective. Site-specific project designs incorporate actions to meet a variety of objectives, such as riparian area enhancement, habitat maintenance or development, scenic stability, and integrity.

Table F-2. Acres of timber production suitability, Sequoia National Forest

Land Classification Category	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
C. Lands that may be suitable for timber production	134,436	134,436	134,436	134,436	134,436
D. Lands where management objectives limit timber production	7,061	54,681	66,367	24,033	95,172
a. Recommended wilderness areas	0	0	11,985	0	17,986
b. Eligible wild river segments	0	685	685	685	685
c. Backcountry management areas	0	0	0	0	44,449
d. Riparian conservation areas	0	50,352	50,352	17,296	50,352
e California spotted owl protected activity centers	7,061	7,061	14,319	7,061	14,319
E. Lands not suitable for timber production	987,361	1,034,981	1,046,667	1,004,033	1,075,472
F. Lands suitable for timber production (total)	127,375	79,755	68,069	110,403	39,264

Table F-3. Acres of timber production suitability, Sierra National Forest

Land Classification Category	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
C. Lands that may be suitable for timber production	380,607	380,116	379,157	380,116	379,157
D. Lands where management objectives limit timber production	52,136	238,490	274,062	145,961	287,073
a. Recommended wilderness areas	0	0	47,465	0	29,599
b. New eligible wild river segments	0	67	67	67	67
c Backcountry management areas	0	0	0	0	55,044
d. Riparian conservation areas	0	216,335	215,870	105,889	215,870
e. California spotted owl protected activity centers	52,136	52,136	99,516	52,136	99,516
E. Lands not suitable for timber production	987,721	1,174,566	1,211,097	1,082,038	1,224,108
F. Lands suitable for timber production (total)	328,471	141,626	105,095	234,154	92,084

Table F-4. Summary of acres of timber production suitability, Sequoia and Sierra National Forests combined

Land Classification Category	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
A. Total National Forest System lands	2,430,928	2,430,928	2,430,928	2,430,928	2,430,928
B. Lands not suited for timber production due to legal or technical reasons	1,915,885	1,916,376	1,917,335	1,916,376	1,917,335
C. Lands that may be suited for timber production	515,043	514,552	513,593	514,552	513,593
D. Lands where management objectives limit timber production	59,136	293,171	340,429	169,994	382,245
E. Total lands not suited for timber production	1,975,082	2,209,547	2,257,764	2,086,371	2,299,580
F. Total lands suited for timber production	455,846	221,381	173,164	344,557	131,348

It is necessary to be aware of a few technical details when reviewing and interpreting the data shown in these tables of acreage of timber production suitability, specifically pertaining to item D, “Lands where management objectives limit timber harvest.” First is that under the 2012 planning rule, this includes lands where either plan objectives or plan desired conditions are not compatible with timber production. The second point is that these categories of lands may overlap. For example, some lands within recommended wilderness or California spotted owl

activity centers is likely also to be within riparian conservation areas. In these tables, each category of land (e.g. eligible wild river segments) shows the total acres of land within that category, by alternative, but if one sums rows D.a. through D.e. for each alternative the result will be greater than shown in row D. That is because the calculation of row D was done in a stepwise fashion, wherein acres removed for each category were removed from consideration for the other categories to avoid counting the same acre of land more than once if that acre fit more than one category of lands for which objectives or desired conditions preclude those lands from being suitable for timber production. So these table show the effect that each criterion would have individually, but the total acreage of lands where management objectives limit timber production does not double count acres of land that fit more than one category.

Planned Timber Sale Program

The planned timber sale program is an estimate of forest product yields associated with projects designed to contribute to the accomplishment of the plan's desired conditions and objectives, consistent with the other plan components during the plan period (by decade). These estimates are based on the projected fiscal capability and organizational capacity of the planning unit. They do not require any specific actions to be taken, rather, they are estimates of actions taken to accomplish the intent of the revised Plan.

The timber sale program contributes to economic sustainability through the production of timber, pulp for paper, specialty woods for furniture, and fuel as a renewable energy source. Timber harvest, whether for wood production, restoration, or other reasons, can support local businesses and employment.

Sustained Yield Limit

The sustained yield limit is the amount of timber, meeting applicable utilization standards, "which can be removed from [a] forest annually in perpetuity on a sustained yield basis" (National Forest Management Act at section 11, 16 USC 1611; 36 CFR 219.11(d)(6)). It is the volume that could be produced in perpetuity on lands that may be suitable for timber production. The calculation of the sustained yield limit is not limited by land management plan desired condition, other plan components, or the planning unit's fiscal capability and organizational capacity. Therefore, the sustained yield limit does not vary across alternatives. The sustained yield limit is not a target but is a limitation on harvest.

The sustained yield was calculated on the acreage of the dominant forest types (by acreage) for each Forest. A representative productivity class was determined by evaluating the full range of forest inventory analysis plots for each modeled forest type. The modeling process used two forest stand development models, Conifers and the Forest Vegetation Simulator (FVS). Conifers was used to simulate the growth and development of seedling conifers for the first 2 decades and FVS was used beyond that timeframe. Thinning was simulated, based on a stand density index density management regime that maintained stand-level index values between estimated full stocking and threshold of imminent mortality bounds. Mean annual increment and periodic annual increment values were calculated by FVS. The length of the simulation was extended through the culmination of mean annual increment and the associated cubic feet per acre value was identified for each forest type.

The total sustained yield limit is 646 MMCF (million cubic feet) per decade. This number incorporates 487 MMCF from the Sierra National Forest and 159 MMCF from the Sequoia National Forests per decade. The sustained yield limit presented here is the same as published in

the 2016 draft revised forest plans for the Sierra and Sequoia National Forest. It was not deemed necessary to revise the estimates of the sustained yield limit despite the recent extensive tree mortality for several reasons. Forest Inventory and Analysis (FIA) plots are visited on a long-term cycle and post mortality data are limited to relatively few plots. Additionally, the sustained yield limit is largely an estimate of long-term capacity of the land. Maintenance or reestablishment of forest over time will maintain growth potential even with periodic volume losses. While one might argue that climate change might reduce long-term site productivity, no published research is available with estimates of the magnitude of change, nor established methodology to estimate reliably such change. Finally, the harvest levels projected below under the revised forest plans are a relatively small proportion of the sustained yield limit. For example, the maximum values projected under alternative B for timber harvest represent 8 percent of the sustained yield limit for the Sequoia National Forest and 9 percent for the Sierra National Forest. The maximum value for any alternative is 14 percent of the sustained yield limit for the Sierra National Forest for the maximum harvest level projected under Alternative D. Even if the sustained yield limit were reduced by 50 percent, all projected harvest levels would remain less than 25 percent of maximum sustained yield. An analysis was performed to evaluate whether sufficient timber volumes currently exist to support the projected rates of landscape treatment with a commercial timber component and the findings of that analysis are described below.

Projected Timber Sale Quantity

The projected **timber** sale quantity is the estimated quantity of timber meeting applicable utilization standards that is expected to be sold during the plan period. As a subset of the projected **wood** sale quantity, the projected timber sale quantity includes volume from timber harvest for any purpose from all lands in the plan area based on expected harvests that would be consistent with the plan components. The projected timber sale quantity is also based on the planning unit's fiscal capability and organizational capacity. Projected timber sale quantity is neither a target nor a limitation on harvest.

The estimated quantity of timber and all other wood products expected to be sold from the plan area for the plan period is called the projected wood sale quantity. The projected wood sale quantity consists of the projected timber sale quantity as well as other woody material such as fuelwood, firewood, or biomass also expected to be available for sale. The projected wood sale quantity includes volume from timber harvest for any purpose based on expected harvests that would be consistent with the plan components. The projected wood sale quantity is also based on the planning unit's fiscal capability and organizational capacity. The projected wood sale quantity is neither a target nor a limitation on harvest.

Although the National Forest Management Act provides that the plan period is at least every 15 years, it limits the sale of timber to less the sustained yield limit for each decade of the plan (16 U.S.C. 1611). Providing estimates in the plan of the annual projected wood sale quantity and the annual projected timber sale quantity for the each of first 2 decades aligns with the National Forest Management Act decadal periods limiting the sale of timber, and provides estimates to cover a second decade if revision of the plan is delayed beyond the 15-year limit.

In the four tables that immediately follow, timber products include volumes other than salvage or sanitation volumes that meet timber product utilization standards, while other estimated wood products include fuelwood, biomass, and other volumes that do not meet timber product utilization standards. Fuelwood is shown separately because the majority of this volume is harvested for personal use rather than by commercial operators. Because Alternative E has land

allocations and management direction quite similar to Alternative C regarding timber harvest for purposes of timber production as well as harvest for other multiple use purposes, the estimated quantities of timber and other wood products does not differ between Alternative C and Alternative E.

For the Sequoia National Forest (Table F-5), the sustained yield limit is 159 MMCF per decade. For the Sierra National Forest (Table F-6), the sustained yield limit is 487 MMCF per decade. Combining the data for the Sequoia, and Sierra National Forests (Table F-7), the sustained yield limit is 646 MMCF per decade.

Table F-5. Planned timber sale program, decadal volume outputs in millions of cubic (MMcf) feet per decade by alternative, Sequoia National Forest. Projected timber sale quantity also displayed in millions of board feet per decade (MMbf/dec).

Timber Products	Alternative A	Alternative B	Alternative C and E	Alternative D
Lands suitable for timber production				
A1. Sawtimber	3-4	4-6	2-4	5-10
A2. Other products	0-2	0-4	0-2	0-6
Lands not suitable for timber production				
B1. Sawtimber	0-1	1-2	0	1-2
B2. Other products	0	0	0	0
C. Projected timber sale quantity (PTSQ) (A1+A2+B1+B2)	3-7	5-12	2-6	6-16
PTSQ in MMbf/dec	15-35	25-60	10-30	30-80
PTSQ sawtimber only in MMbf/dec (A1+B1)	15-25	25-40	10-20	30-60
Other estimated wood products				
D. Fuelwood	2-3	2-3	2-3	2-3
E. Projected wood sale quantity (PWSQ) (C+D)	5-10	7-15	4-9	8-19

Table F-6. Planned timber sale program, decadal volume outputs in millions of cubic feet (MMCF) per decade by alternative, Sierra National Forest. Projected timber sale quantity also displayed in millions of board feet per decade (MMbf/dec).

Timber Products	Alternative A	Alternative B	Alternative C and E	Alternative D
Lands suitable for timber production				
A1. Sawtimber	9	18-36	4-8	26-54
A2. Other products	0-3	0-6	0-3	0-10
Lands not suitable for timber production				
B1. Sawtimber	1	2-4	1-2	4-6
B2. Other products	0	0	0	0
C. Projected timber sale quantity (PTSQ) (A1+A2+B1+B2)	10-13	20-46	5-13	30-70
PTSQ in MMbf/dec	50-65	100-230	25-65	150-350
PTSQ sawtimber only in MMbf/dec (A1+B1)	50	100-200	25-50	150-300
Other estimated wood products				
D. Fuelwood	2-3	2-3	2-3	2-3
E. Projected wood sale quantity (PWSQ) (C+D)	12-16	22-49	7-16	32-73

Table F-7. Summary of the planned timber sale program, decadal volume outputs in millions of cubic feet (MMcf) per decade by alternative Sequoia, and Sierra National Forests combined. Projected timber sale quantity also displayed in millions of board feet per decade (MMbf/dec).

Timber Products	Alternative A	Alternative B	Alternative C and E	Alternative D
Lands suitable for timber production				
A1. Sawtimber	12-13	22-42	6-12	31-64
A2. Other products	0-5	0-10	0-5	0-16
Lands not suitable for timber production				
B1. Sawtimber	1-2	3-6	1-2	5-8
B2. Other products	0	0	0	0
C. Projected timber sale quantity (PTSQ) (A1+A2+B1+B2)	13-20	25-58	7-19	36-88
PTSQ in MMbf/dec	65-100	125-290	35-95	180-440
PTSQ sawtimber only in MMbf/dec (A1+B1)	65-75	125-240	35-70	180-360
Other estimated wood products				
D. Fuelwood	4-6	4-6	4-6	4-6
E. Projected wood sale quantity (PWSQ) (C+D)	17-26	29-64	11-25	40-94

Alternative A is generally maintaining the existing standards and guidelines, therefore it is utilized as a baseline and derived from “Cut/Sold” reports (5-year average), although reduced somewhat due to decreasing agency capacity and reduction in overstocked acres in need of thinning due to drought and insect mortality and severe fires. Yields for other alternatives were estimated by simulating intermediate harvests (utilizing FVS with FIA data), compliant with the

alternative's goals and objectives. Volumes displayed in the four previous tables were derived by multiplying simulated harvest volumes per acre by the anticipated area treated shown in Table F-8, Table F-9, and Table F-10. Implementation of alternatives B and D would be expected to expand the size of projects, because trees with greater value would be harvested and project-level economic feasibility would increase. In addition to this effect, through the use of stewardship contracts, restoration projects unrelated to timber harvest are more likely to be funded via retained receipts associated with the value of forest products. Because alternatives C and E constrain the amount and size of harvested trees, timber production is estimated to be less while requiring higher costs in project design, as well as be less likely to provide higher valued products, with an associated decline in retained receipts.

Table F-8. Acres of vegetation management practices implemented per decade, Sequoia National Forest

Forestwide Vegetation Management Practices	Alternative A	Alternative B	Alternative C and E	Alternative D
Thinning (intermediate harvest)	3,000–5,000	5,000–8,000	2,000–4,000	6,000–12,000
Regeneration (group selection)	1,000	1,000–1,500	0	1,500–2,000
Precommercial thinning	5,000	5,000–7,000	1,500–3,000	6,000–9,000

Table F-9. Acres of vegetation management practices implemented per decade, Sierra National Forest

Forest-wide Vegetation Management Practices	Alternative A	Alternative B	Alternative C and E	Alternative D
Thinning (intermediate harvest)	10,000	20,000–40,000	5,000–10,000	30,000–60,000
Regeneration (group selection)	3,000	3,000–4,500	0	4,500–6,000
Precommercial thinning	10,000	10,000–20,000	2,250–5,000	15,000–25,000

Table F-10. Summary of acres of vegetation management practices implemented per decade, Sequoia, and Sierra National Forests combined

Forest-wide Vegetation Management Practices	Alternative A	Alternative B	Alternative C and E	Alternative D
Thinning (intermediate harvest)	13,000–15,000	25,000–48,000	7,000–14,000	36,000–72,000
Regeneration (group selection)	4,000	4,000–6,000	0	6,000–8,000
Precommercial thinning	15,000	15,000–27,000	3,750–8,000	21,000–34,000

Given the recent extensive tree mortality in the southern Sierra Nevada, an analysis was conducted to evaluate if sufficient acres with adequate timber volumes exist on the Sequoia and Sierra National Forests to support the acreage of forest management treatments and volume yields described in the preceding tables. Several assumptions were made to facilitate this analysis. One is that based on extensive experience on these forests, a typical forest restoration prescription aimed to move towards desired conditions will remove about 25 percent of the standing volume. Another assumption is that a partial harvest (could be a thinning or series of group selections applied to a portion of a forest stand, or some combination thereof) that removes approximately 5,000 board feet per acre (5MMbf/ac), (or 1,000 cubic feet per acre (cuft/ac) on average is likely economically feasible, meaning a treatment with this volume yield would likely be purchased and implemented as a timber sale if offered. So a stand with a minimum of 20,000 board feet per acre

(or 4,000 cuft/ac) provides opportunity for a commercial treatment. It is further assumed that stands containing these or greater volumes would benefit from thinning to reduce stand density.

A data layer depicting stand volumes for these two forests was obtained from the Forest Service Remote Sensing Laboratory. This layer was prepared according to methodology described in (Huang et al. 2017). Imagery used for this data layer was obtained in 2016, so this layer accounts for a majority of the severe tree mortality that occurred between 2012 and 2016. This is the most recent data available, so it represents the best available scientific information to estimate current standing live timber volume. This layer was used to plot maps of standing live tree volume per acre for both forests, in classes of 4,000 cubic feet per acre (Figure F-1 through Figure F-4). An average conversion factor of 1 cubic foot per acre of volume equals 5 board feet per acre. We also calculated acreage for each volume class, and other attributes to evaluate if the projected treatment acres and harvest volumes are supported by landscape conditions. Areas where timber harvest is prohibited or significantly constrained such as wilderness or inventoried roadless areas were removed from consideration, and riparian conservation areas were tallied separately as these areas are not suitable for timber production, but trees may be harvested for other purposes including restoration towards desired conditions. We focused on reasonably accessible and mechanically operable ground by using mechanical treatment Scenario D from (North and others 2015).

Our results indicate that approximately 96,000 acres exist on the Sierra National Forest that contain a minimum of 4,000 cuft/ac (20,000 MMbf/ac) that are mechanically operable and not within riparian conservation areas, and approximately 22,000 such acres exist on the Sequoia National Forest (see cubic foot volume maps, Figure F-1 through Figure F-4). These acreages could support the treatment and harvest levels of all alternatives for at least the first decade, and for most alternatives for two decades with a commercial thinning regime. The maximum treatment levels under alternative D would exceed the available acreage on the Sequoia National Forest toward the end of the second decade and would be approaching the available acreage on the Sierra National Forest in the same time frame. Note that this analysis does not project growth or mortality. Significant future losses of forest due to disturbance could decrease available treatment acres, and some acres below the threshold would likely grow into availability towards the end of the plan period.

Note also that acres of regeneration harvest and thinning are not necessarily additive. Group selection harvests yield greater volume per treated acre than thinning. Both Forests have expressed concern that organizational and budget capacity challenge accomplishment towards the upper end forecast in alternative B, however, volume outputs might be achieved with thinning acres below the maximum if a reasonable proportion of the group selection regeneration harvest acres are achieved.

The vast majority of sawlogs harvested from the Sierra and Sequoia National Forests are processed by the Sierra Forest Products mill at Terra Bella. This is by far the closest mill, and the next mill to the north at Chinese Camp receives most of its supply from much closer private lands as well as the Stanislaus National Forest. As such, current and projected sawtimber opportunities are driven by the projected capability of the infrastructure, as well as the capability of the Forests to execute the timber program. The capability of the land to provide sawtimber products consistent with achieving desired conditions exceeds the current organizational and industrial capacity.

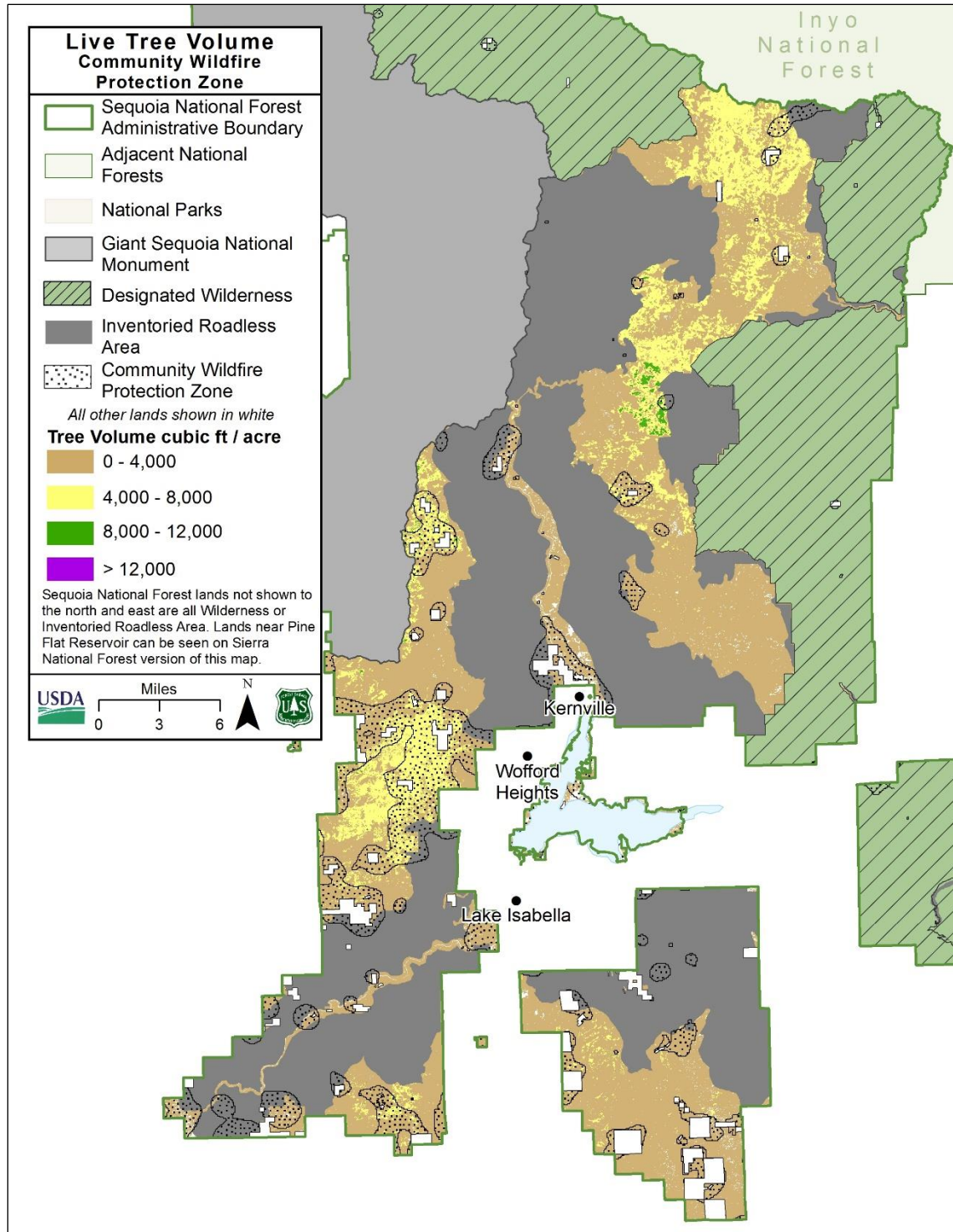


Figure F-1. Tree Volume in cubic feet per acre and Community Wildfire Protection Zone (Alternative B) on the Sequoia National Forest

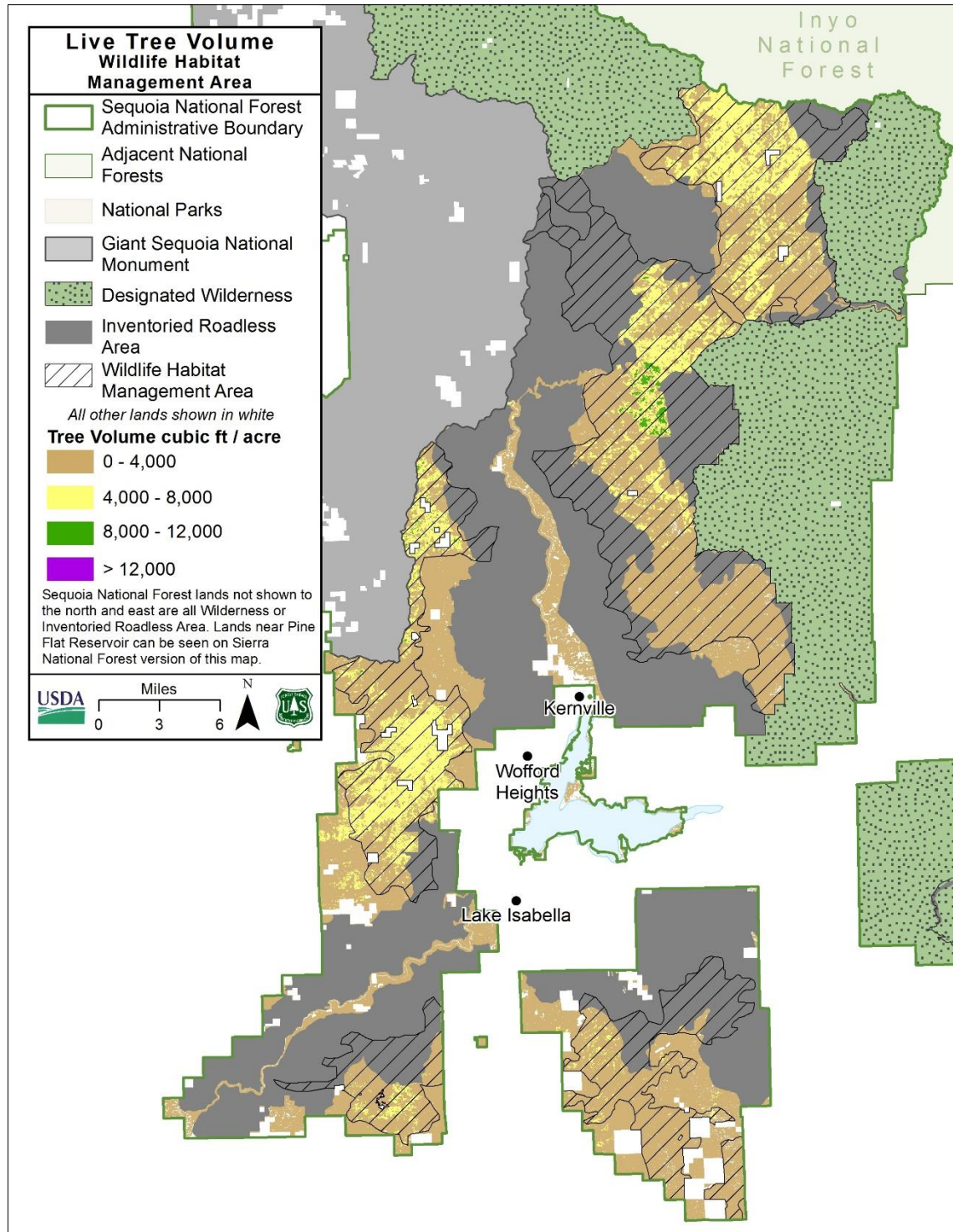


Figure F-2. Tree Volume in cubic feet per acre and Wildlife Habitat Management Area (Alternative B) on the Sequoia National Forest

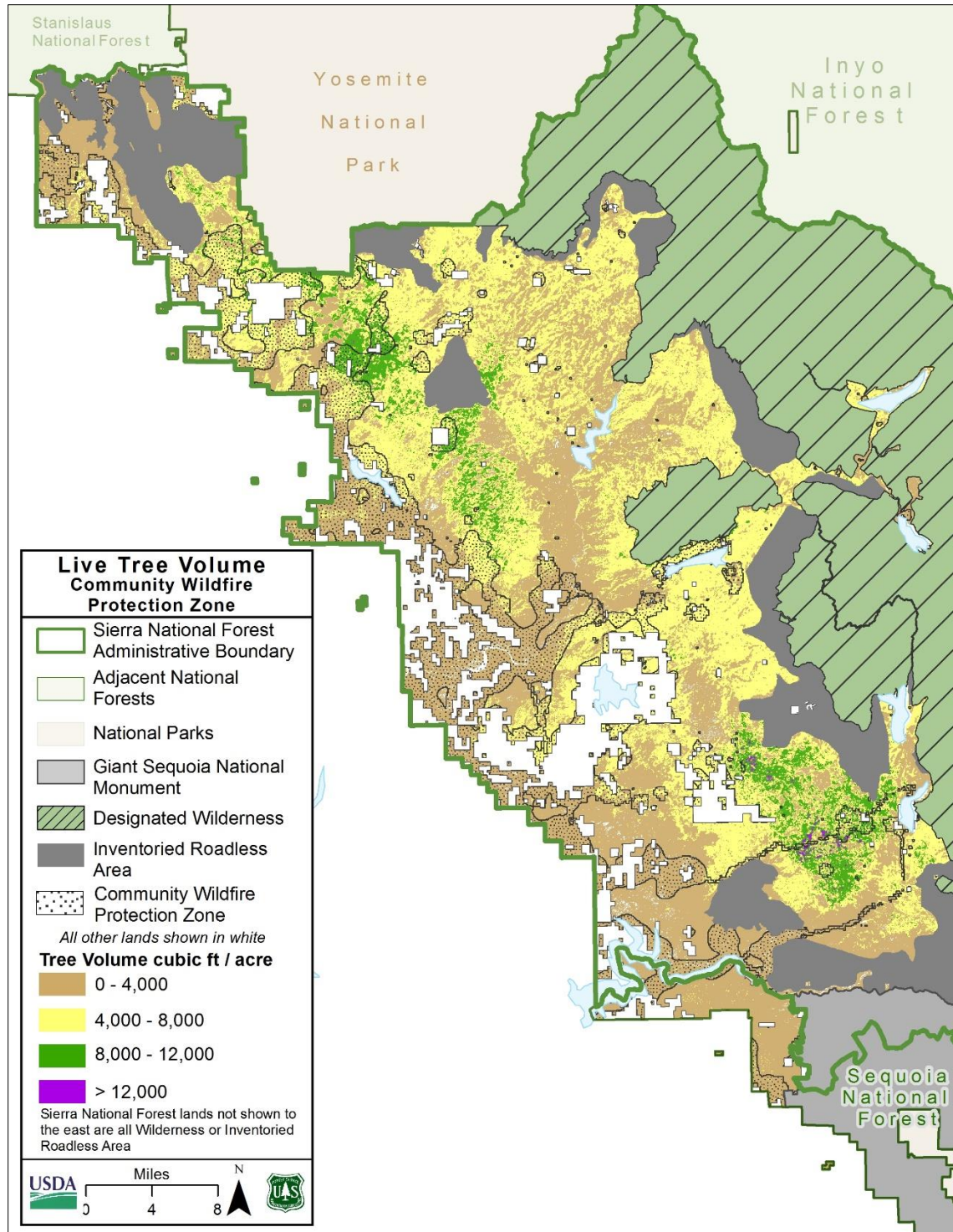


Figure F-3. Tree Volume in cubic feet per acre and Community Wildfire Protection Zone (Alternative B) on the Sierra National Forest

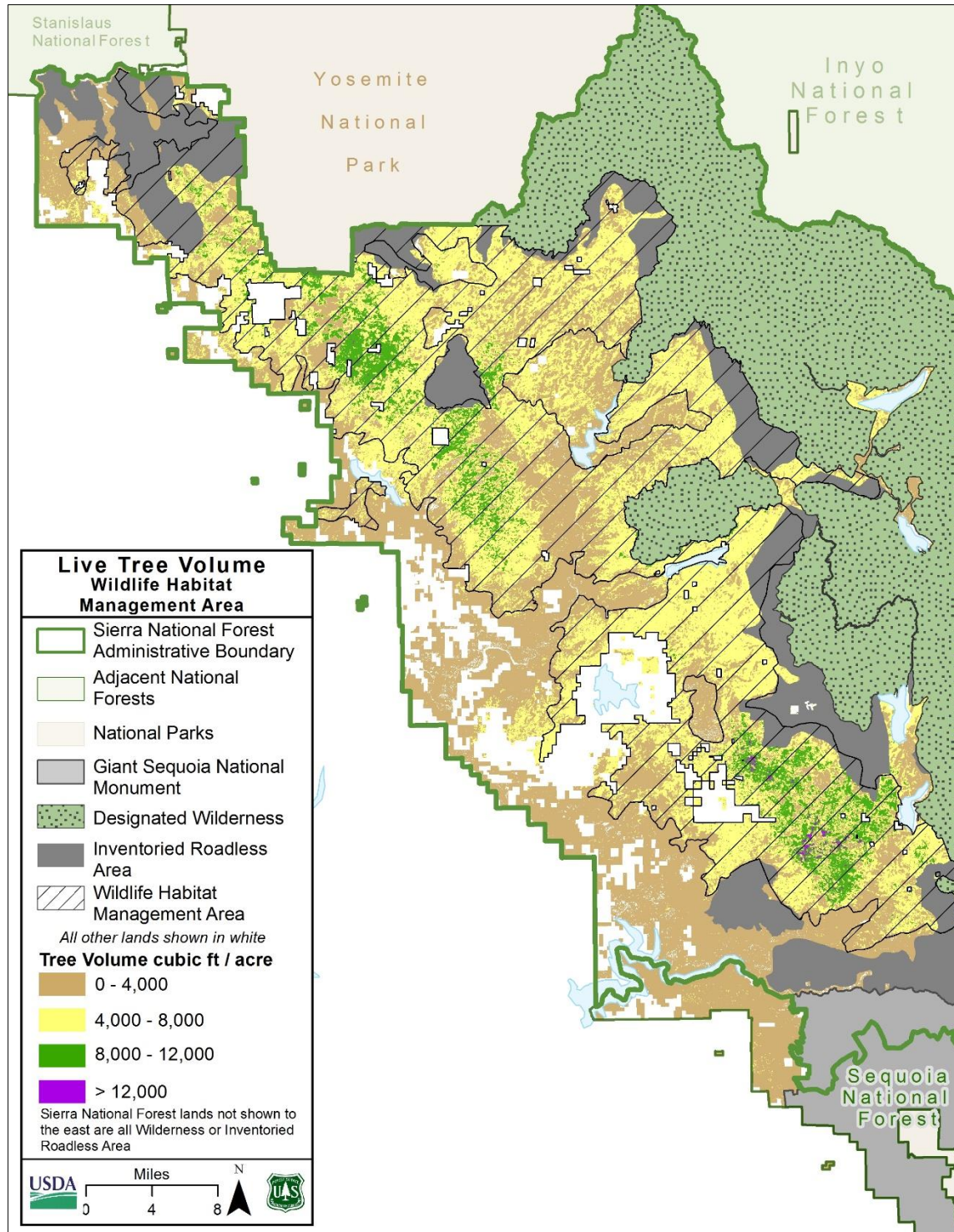


Figure F-4. Tree Volume in cubic feet per acre and Wildlife Habitat Management Area (Alternative B) on the Sierra National Forest

Row A2 in Table F-5, Table F-6, and Table F-7 shows estimated harvest of other convertible products, which is likely dominated by biomass (wood chips for energy production or mulch for landscaping). The range for these estimates includes zero, which indicates a high degree of uncertainty in forecasting harvest levels for these products. Adequate supply exists to support these levels, given that biomass can come from trees too small to yield sawtimber, and larger trees of insufficient quality to produce sawlogs, including dead trees that have deteriorated below utilization standards. However, the value of biomass is insufficient to support the costs of harvest, transport, and chipping in many cases. Cost of harvesting, processing, and transporting biomass to an end-use facility is often 2 to 3 times the value of the biomass at the end-use facility. Various energy incentive and transportation subsidy programs have been available in the southern Sierra in recent years, and these programs have facilitated biomass harvests in the ranges estimated for Alternatives A and B in recent years. The uncertainty of the future of these programs, and the challenging economics of biomass utilization result in very high uncertainty in biomass harvests over the life of the revised plans for the Sierra and Sequoia National Forests. If economics are viable, biomass harvests could be a key element of treatments to move forest stands and landscapes towards desired conditions. This is because biomass may be produced by thinning of overly dense small trees, or trees of poor quality, as well as by removal of a portion of the dead trees in areas with high tree mortality, thereby reducing future woody surface fuel loads.

One other factor has contributed to relatively high biomass yields on the Sierra and Sequoia National Forests in recent years. The recent episode of drought- insect-, and density-related tree mortality has resulted in numerous dead hazard trees along various linear rights-of-way for utilities and roads. Utility companies and road agencies are required to abate these hazards and dispose of the material to protect their infrastructure and public safety, as well as prevent significantly increasing surface fuels. Therefore, these utility and transportation entities have covered harvest, processing, and transportation costs to deliver biomass to end use facilities in order to dispose of this material. Although this trend could continue into the future, the intensity and scale of tree mortality between 2012 and 2016 caused a large increase in this activity, which is not likely to be sustained in the future.

Vegetation Management Practices

Forest management on the southern Sierra Nevada Forests consists of restoration and fuels reduction treatments designed to move towards desired conditions for the associated terrestrial vegetation type on suitable timber lands and other lands. Most treatments would occur in the montane zone, with minor amounts in the upper montane zone.

The planned management approach uses an uneven-aged management system. Group selection would be used to regenerate suitable lands, increasing vertical and horizontal structural heterogeneity and moving species composition towards desired conditions. Group selection may also be applied to non-suitable lands to move species composition and structure towards desired conditions. Thinning would be used to increase individual tree vigor, increase horizontal heterogeneity, and reduce fuel hazards. Other silvicultural practices may be used to achieve site-specific objectives such as those related to insect and/or pathogen concerns, and meadow enhancement.

Even-aged management systems such as clear cuts or shelterwood cuts will not be used. These systems are not considered the best way to move towards desired conditions given current trends in southern Sierra conifer forests, including relative lack of large trees compared to natural range of variation, and continued loss of mature forest due to uncharacteristically severe fire and

mortality of large and old trees due to droughts and insect infestation interacting with overly dense stands. Therefore, the revised Forest Land and Resource Management Plans do not specify the maximum size of openings that would be created in even-aged regeneration harvests.

Forest management activities on lands not suitable for timber production are likely to be responsive to safety concerns or disturbance agents such as wildfire, windthrow, insect and disease, or other restoration objectives. These include objectives such as moving species composition towards desired conditions, or reducing risk of loss of mature forest stands to insect infestations or uncharacteristic severe wildfire.

While only one decade is displayed in the tables immediately above, the second decade is projected to be comparable to the first decade. However, if losses of mature forest stands to uncharacteristic severe fires, droughts, insects, diseases continue at recent levels or increase, then timber harvest levels would likely also decrease somewhat during the second decade of the revised forest plans.

Methodology

The sustainable yield available for all Forests is substantially higher than the current capacity of any of the southern Sierra Nevada Forests to implement individually or collectively given current appropriations, as well as current regulatory and management constraints. The projected area treated disclosed in the four tables immediately above was established based on projected fiscal and personnel capabilities in conjunction with management objectives and limitations of each alternative.

In general, alternative A describes the existing condition under existing management direction (prior to forest plan revision efforts). Alternative B assumes an increase in accomplishment by removing some of the prescriptive constraints associated with existing management direction, in favor of guiding management actions to achieve desired conditions. Alternatives C and E are more prescriptive than alternative A and guide management actions with limits and restrictions intended to minimize changes originating from timber harvest. Like alternative B, alternative D removes many of the prescriptive constraints across all wildfire zones. Also, alternatives B and D encourage larger, landscape-scale projects.

Based on current levels of funding and production, it might be assumed that under alternative A, with few changes in regulating direction, future treatments would be relatively consistent with historic treatments (based on Cut/Sold reports and Forest Activity Tracking System 5-year averages). However, several factors are present that make it likely that harvest volumes under Alternative A would decrease somewhat relative to recent production. The severe drought and tree mortality between 2012 and 2016 has reduced the number of acres available for thinning treatments, and many of the areas that could be thinned under the current plan direction have already been treated. Many of the remaining acres with sufficient volume are not operable due to topography, or have constraints in the Forest plan direction such as the restriction on mechanical harvest in California spotted owl protected activity centers. Also, the Forests will have reduced budget and organizational capacity as current supplemental funding programs such as the Collaborative Forest Landscape Restoration project (Dinkey) end. Alternative B has the potential to treat more acres, up to 1.5 times current levels, given a focus on desired conditions, especially in wildfire protection zones. Alternative D is assumed to further expand management to achieve increased long-term ecological resilience, at the landscape scale, resulting in improved project efficiencies, leading to projects 1.5 to 2 times the current level of timber harvest. Alternatives C

and E, with an emphasis on projects that minimize mechanical treatments, such as timber harvest, by retaining and expanding prescriptive constraints, likely increase costs and reduce design flexibility. Feasible project areas are expected to be less than current production, perhaps to 0.25 to 0.5 times less, due primarily to a focus on minimizing short term impacts of management on habitats for at-risk wildlife species.

Silvicultural Treatments Used to Achieve Plan Objectives

While uneven-aged management will be the primary management system used to achieve desired conditions and timber production, other silvicultural treatments may be utilized to better meet specific forest health and restoration objectives for long-term sustainability.

Reforestation

Reforestation is the act of renewing forest cover by establishing young trees. Prompt and successful reforestation is an essential phase of managed forests. This is typically accomplished by planting nursery-grown seedlings, originating from selected trees with favorable growth characteristics. The establishment of seedlings from nearby sexually-mature trees may supplement areas planted with seedlings. In some cases, seedlings originating from nearby trees may be used to meet management objectives. In the case where desired tree species are capable of sprouting, for example oaks and aspen, these sprouts commonly provide for effective reestablishment. Reforestation is also important to move stands towards desired conditions following significant losses to drought, insects, disease, or severe wildfires. It is anticipated only a portion of lands affected by these disturbances will be reforested, with an emphasis on those sites most capable of sustaining mature forest cover in the future.

Site Preparation

These treatments are designed to enhance the success of regeneration efforts. A variety of methods may be used to reduce competing vegetation, planting obstacles, and fuel levels. Ground-based equipment and/or hand tools may be used to reduce tree and shrub levels, providing a more favorable environment for developing seedlings. Selective herbicides may be applied to suppress competing plants, reducing competition for soil moisture and sunlight. Fire may be used to reduce surface fuel or to consume woody material piled by machine or hand. One or more of these activities may be used to prepare sites for reestablishing seedlings.

Seedling Establishment

New forests may be established by planting seedlings or by germinating seed from nearby mature trees. Seedlings are grown in tree nurseries from selected seed sources to meet the expected demands of the future growth environment. Selected species, numbers, and arrangements are designed to provide a variety of options for the future, including the sustained production of desired forest products. Seedlings developing from seed provided by nearby mature trees vary widely in number and arrangement and commonly establish, in pulses, over time.

In managed environments, planting selected species at designed numbers and arrangements, provides advantages over the development of seedlings from nearby mature trees. Seedlings originating from nearby trees often provide numbers in excess of need and undesired arrangements. They may, however, provide for successful establishment of new forests in places regarded as difficult to plant or when planted seedling mortality levels are unacceptably high. Regardless of origin, both sources benefit from actions taken to provide more favorable growth environments.

Seedling Stocking Criteria

The stocking criteria for lands suitable for timber production are indicated in Table F-11. They are designed to provide for the attainment of the long-term desired conditions, as well as provide sufficient trees to meet the potential forest product yields over time. The values apply after regeneration harvests, as well as after disturbances, including, for example, areas affected by high-severity fire. A certified silviculturist may write and implement a prescription that deviates from these stocking levels if site-specific conditions or objectives warrant doing so.

On lands identified as suitable for timber production, successful restocking is expected to occur within 5 years of the final harvest.

Table F-11. Stocking criteria for suitable lands by forest type

Forest Type	Site Class*	Trees per Acre Minimum
Ponderosa/Jeffrey pine	0–3	200
Ponderosa/Jeffrey pine	4–5	150
True fir	All	300
Douglas-fir	All	225
Mixed conifer	All	200

* As defined by the Pacific Southwest Region of the Forest Service

Release

These treatments are designed to free young trees from undesirable competing vegetation. Treatments are aimed at increasing the availability of moisture, sunlight, and nutrients to planted seedlings, thus increasing the seedlings chance of survival, as well as favorable growth rates. Depending on conditions, release can be performed using hand tools, herbicides, or ground-based machines.

Precommercial Thinning

This treatment removes selected trees to reduce stocking and to promote growth and development on the more desirable trees. The removed trees are typically small and without sufficient value to cover the cost of the treatment.

Timber Harvest

The projected activities associated with scheduled suitable timberland forest management are geared toward uneven-aged management, a system that uses a planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes. Uneven-aged management is consistent with moving towards and maintaining desired conditions in southern Sierra Nevada forest types as informed by the natural range of variability. The types of treatments used are primarily thinning and group selection:

Thinning is commonly applied to lower stand density and improve the health and growth rates of the remaining trees. It may also be designed to alter tree arrangement or species composition. Trees of merchantable size are selected for removal, providing the largest portion of forest products, as estimated above. When economically feasible, trees less than merchantable size, may be removed, especially when the reduction of ladder fuels is an objective.

Group selection is the projected method used to regenerate portions of forest stands. All, or most, of the trees are removed, followed by the establishment of seedlings. The size of the opening is variable, but is designed to provide sufficient site resources for favorable seedling establishment and growth. For example, establishment of shade-intolerant pine species typically requires larger openings than shade-tolerant true fir species. Unlike even-aged methods such as clearcutting, group selection openings are always smaller than an individual forest stand, and typically do not exceed three acres in size. Group selection harvests can be used to improve heterogeneity consistent with historic stand structures. Sierran mixed-conifer stands historically exhibited fine-scale heterogeneity with patch sizes commonly ranging between 0.05 acres and .75 acres whereas current stands are often relatively homogeneous over tens or hundreds of acres (Safford and Stevens 2017). Group selections may sometimes occur in larger patches up to 3 acres, depending on stand conditions, but will be designed to move towards the desired conditions of finer scale variability over time as stand development, natural disturbances, and intermediate treatments such as prescribed burning or thinning occur. Larger patch sizes than the natural range of variation may be necessary in some cases to ensure establishment of shade intolerant species such as pines. The shift in species composition from pines to true shade-tolerant firs and cedars is also a significant departure from historic conditions and reestablishing appropriate species composition is also a necessary part of moving towards desired conditions over the long-term. Having appropriate species composition facilitates future modifications of stand structure towards desired conditions and also is important for long-term sustainability of Sierran mixed-conifer stands.

In addition to scheduled forest management, management actions may also respond to disturbance events (such as, wildfire, windthrow, insect, parasite or pathogen-related decline). Other harvest methods may apply to specific conditions objectives. For example, after wildfire, especially on suitable land, salvage harvests would be implemented to recover the economic value of the dead/dying trees, as well as reduce the fuel environment to promote the persistence of reestablishing forests. Other events, such as windthrow, insect- or pathogen-related mortality, or mistletoe infections, may lead to salvage or sanitation harvests, to recover economic value, reduce risk of further loss to insect- or disease-related mortality, and improve residual stand health. It is important to recognize that these management actions responding to disturbance events or threats are not planned harvests, and may be executed in different manners than planned harvests. For example, maximum harvest opening sizes from the National Forest Management Act of 1976 do not apply to the size of openings harvested as a result of catastrophic conditions such as fire, insect and disease attack, or windstorms.

Safety considerations, although not regarded as a component of a harvest system, will likely lead to the harvest of dead/dying trees, as well as structurally-defective living trees that may fail, along roads and other places where people or property are threatened. This action, commonly referred to as hazard tree removal, may be used extensively along roads and trails within wildfire areas.

Definitions

Canopy closure: The percentage of the sky hemisphere obscured by vegetation when viewed from a single point.

Canopy cover: The percentage of forest floor covered by the vertical projection of the tree crowns.

Convertible forest products: Any product made from the bole of a tree, that can be measured in units of volume that can be mathematically converted to cubic foot volume or board foot volume. Examples include sawlogs, posts and poles, pulpwood, and biomass.

Even-aged harvest: A method of regeneration of a forest with a single age class. An even-aged system consists of a planned sequence of treatments designed to maintain and regenerate a stand with predominantly one age class. The range of tree ages is usually less than 20 percent of the rotation (length in years). Treatments include clearcutting, seedtree, shelterwood, and coppice regeneration methods.

Final regeneration harvest: The final timber harvest in a sequence of harvests designed to regenerate a timber stand or release a regenerated stand. A final regeneration harvest could be a clearcut, removal cut of a shelterwood or seedtree system, or a selection cut.

Forest land: Land that is at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest uses. Land developed for nonforest use includes areas for agricultural crops, improved pasture, residential or administrative areas, roads of any width and adjoining road clearing, and powerline clearing of any width (36 CFR 219.19).

Fuelwood: Wood used for conversion to some form of energy.

Group selection: This is the anticipated regeneration method to be used. Groups of trees are removed and seedlings are established within areas that may range up to 3 acres.

Growing stock: All trees growing in a forest or in a specified part of it, usually commercial species, meeting specified standards of size, quality, and vigor, and generally expressed in terms of trees per acre, density, or volume.

Hazard tree removal: The abatement of tree hazards, generally near roads, trails, and facilities. Tree hazards include dead or dying trees, dead parts of live trees, or unstable live trees (due to structural defects or other factors) that are within striking distance of people or property (a target). Hazard trees have the potential to cause property damage, personal injury or fatality in the event of a failure.

Integrated resources service contract (IRSC): A stewardship contract where the cost of services or construction exceeds the value of the goods (usually timber product removal). The IRSC may trade goods for services, use appropriated funds, and/or use retained receipts from another stewardship contracting project to pay for service work. Each IRSC includes mandatory restoration work items and may include optional restoration work items, which may be added at the government's option.

Integrated resources timber contract (IRTC): A stewardship contract where the value of goods (usually timber product removal) exceeds the cost of services. Each IRTC includes mandatory

restoration work items and may include optional restoration work items. Funds received for product removal in excess of service work are retained by the Forest as retained receipts to be used to accomplish restoration work in designated stewardship areas.

Management practices (Vegetation management practices): Silvicultural practices such as reforestation, prescribed fire, thinning to reduce stand density, and other practices designed to facilitate growth and development of trees.

Management intensities: The set and schedule of management practices typically used for certain forest or timber types to achieve desired conditions that may include timber production.

Mean annual increment of growth and culmination of mean annual increment of growth: The mean annual increment of growth is the total increment of increase of volume of a stand (standing crop plus thinning) up to a given age divided by that age. The culmination of mean annual increment of growth is the age in the growth cycle of an even-aged stand at which the average annual rate of increase of volume is at a maximum. In land management plans, the mean annual increment of growth is expressed in cubic measure and is based on the expected growth of stands according to intensities and utilization guidelines in the plan (36 CFR 219.19).

Mechanical thinning: The thinning of trees in even- and uneven-aged stands involving removal of trees in rows, strips, or set spacing intervals. Mechanical in this sense does not necessarily indicate the use of machinery, but rather the set way in which the thinning is implemented.

Nonforest land: Lands that do not meet the definition of forest land.

Reasonable assurance: A judgment made by the responsible official based on best available scientific information and local professional experience that practices based on existing technology and knowledge are likely to deliver the intended results. Reasonable assurance applies to average and foreseeable conditions for the area and does not constitute a guarantee to achieve the intended results.

Restocked: The condition of the growing space occupancy of trees to be achieved after a disturbance that has substantially altered the existing stocking.

Rotation: The number of years (including the regeneration period) required to establish and grow timber under an even-aged management system to a specified condition or maturity for regeneration harvest.

Salvage cutting: The removal of damaged, dying, or dead trees after injury for outside forces or disturbance. Injury could be caused by wildfire, disease, insects, weather events or other agents. Salvage is conducted to recover economic value that otherwise would be lost, remove trees that present a safety hazard to people, property, or wildlife, reduce available fuels, or other noneconomic purposes. Reforestation after salvage is usually by artificial regeneration.

Sanitation cutting: The removal of individual trees which have suffered or are likely to suffer disease or insect attack, to reduce the actual or anticipated spread of the disease or insects, and to recover potential mortality.

Single tree selection: Individual trees of all size classes are removed more or less uniformly throughout the stand to promote growth of remaining trees and provide small spaces for regeneration.

Special forest products: Products or natural resources that are not the traditional timber and wood products. Examples include such products as moss, Christmas trees and boughs, mushrooms, transplants (trees, shrubs or herbaceous plants), cones, medicinal plants, seeds, nuts, berries, and decorative wood.

Stand: A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit, such as mixed, pure, even-aged, and uneven-aged stands.

Timber production: The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.19).

Two-aged system: A planned sequence of treatments designed to regenerate or maintain a timber stand with two age classes. A two-aged system is a form of even-aged management.

Uneven-aged management system: A system which is implemented to regenerate and maintain a multi-aged forest structure by removing some trees of all age classes and, at the same time, creating microsites for the establishment of seedlings. An uneven-aged system is a planned sequence of treatments designed to regenerate or maintain a timber stand with three or more age classes. Treatments include single-tree selection and group selection regeneration methods.

Utilization standards: Utilization standards are specifications for merchantable forest products offered in a timber sale.

Variable retention: An approach to harvesting based on the retention of structural elements or biological legacies (trees, snags, and logs) from the harvested stand for integration into the new stand to achieve various ecological objectives—note the major variables in the variable retention harvest system are types, densities, and spatial arrangement of retained structures; aggregated retention is the retention of structures or biological legacies as (typically) small, intact forest patches within the harvest unit; dispersed retention is the retention of structures or biological legacies in a dispersed or uniform pattern.

References

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Appendix G

Consistency With Other Planning Efforts

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Appendix G.

Consistency With Other Planning Efforts

Introduction

The 2012 Planning Rule regulations (36 CFR 219.4(2)) require national forest planners to review the planning and land use policies of local governments, where relevant to the plan area. This appendix displays the results of this review.

The review included consideration of:

- The objectives of local governments, as expressed in their plans and policies;
- Opportunities for the plan to address the impacts identified or to contribute to joint objectives; and
- Opportunities to resolve or reduce conflicts, within the context of developing the plan's desired conditions or objectives.

Sequoia National Forest

County Governments

The Sequoia National Forest occurs within three counties: Fresno, Kern, and Tulare Counties in California. County plans can be used as a source of information on the history of land use within the region, patterns of development, desired conditions, and current county land use goals, objectives, and policies. County governments hold no legal authority over independent jurisdictions such as Federal and State lands, incorporated cities and towns, or Native American reservations.

County land use within the planning area ranges from traditional uses such as farming and ranching in rural areas to denser concentrations of residential, industrial, and commercial uses in and around suburban and urban areas. One of the common themes is how, and whether, private owners and public land managers can manage the competing priorities of resource conservation and economic development; in particular, how to cope with the growing demands for housing and recreation while ensuring preservation of a shrinking natural resource base that contributes to the Southern Sierra Nevada's highly valued rural character.

Fresno County

Policies in many elements of the Fresno County General Plan were found to be relevant to the Sequoia Forest revised plan. These policies were reviewed for consistency with the forest's revised plan. No conflicts between the Fresno County Plan elements and the components of the revised plan have been discovered. The discussion below highlights relevant consistencies between the plans.

Fresno County Goals and Policies Related to the Sequoia NF as Expressed in General Plan

Fire

Policy PF-H.5: The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

Policy PF-H.7: The County shall encourage local fire protection agencies in the county to maintain the following as minimum fire protection standards (expressed as Insurance Service Organization (ISO) ratings):

- a. ISO 4 in urban areas;
- b. ISO 6 in suburban areas; and
- c. ISO 8 in rural areas.

Policy PF-H.8: The County shall encourage local fire protection agencies in the county to maintain the following as minimum standards for average first alarm response times to emergency calls:

- a. 5 minutes in urban areas;
- b. 15 minutes in suburban areas; and
- c. 20 minutes in rural areas.

Program PF-H.B: The County shall work with the California Department of Forestry and Fire Protection, local fire protection agencies, and city fire departments to maximize the use of resources to develop functional and/or operational consolidations and standardization of services and to maximize the efficient use of fire protection resources.

How the Sequoia National Forest Plan Considered These Components

Fire management zones have been designated and plan components address the need to reduce the risk of loss of damage to communities from wildfire and also to address areas where wildfire is needed for ecological restoration. The Strategic Fire Management Zones help support decision-makers before a fire ignition occurs by pre-assessing the risk and benefits from wildland fire to areas on the landscape.

The forest would continue to work with adjacent landowners and agencies in fire management efforts for protection of public health and safety. These components were considered in the “Fire” and “Strategic Fire Management Zones” sections of the plan.

Open Space and Conservation Element

Policy OS-A.1: The County shall develop, implement, and maintain a plan for achieving water resource sustainability, including a strategy to address overdraft and the needs of anticipated growth.

Policy OS-A.3: The County shall provide active leadership in efforts to protect, enhance, monitor, and manage groundwater resources within its boundaries.

Policy OS-A.4: The County shall update, implement, and maintain its Groundwater Management Plan.

Policy OS-A.12: The County shall promote preservation and enhancement of water quality by encouraging landowners to follow the “Fresno County Voluntary Rangeland and Foothill Water Quality Guidelines.”

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that address watershed restoration and conservation, which is a means for attaining water resource sustainability; groundwater quality and quantity preservation and water quality. These components were considered in the “Conservation Watersheds” and other watershed sections of the plan.

Water Quality

Policy OS-A.25: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

Policy OS-A.26: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components to protect water quality reduce erosion and encourage the restoration of watersheds. Compliance with best management practices is required as part of the Sequoia NF's plan. These components were considered in the "Conservation Watersheds" and other watershed sections of the plan.

Forest Resources

Goal OS-B: To maintain healthy, sustainable forests in Fresno County, conserve forest resources, enhance the quality and diversity of forest ecosystems, reduce conflicts between forestry and other uses, encourage a sustained yield of forest products, protect and conserve lands identified as suitable for commercial timber production within the county, and conserve forest lands that have other resource values including recreation, grazing, watershed, and wildlife habitats.

How the Sequoia National Forest Plan Considered These Components

The 2012 Planning Rule emphasizes the development of forest plans that provide ecological, economic and social sustainability. The Sequoia NF plan is designed to develop a sustainable and resilient forest through the creation of desired conditions for forest ecosystems. Additionally, the mission of the Forest Service is multiple uses and therefore the plans include components that address recreation, grazing watershed and wildlife which comports with the County Plan goal and policies. These components were considered in the "Timber and Other Forest Products" and "Terrestrial Ecosystems and Vegetation" sections of the plan.

Policy OS-B.1: The County shall encourage the sustained productive use of forest land as a means of providing open space and conserving natural resources.

How the Sequoia National Forest Plan Considered These Components

The forest plan addresses timber suitability of Sequoia National Forest land and encourages public use of the forest.

Policy OS-B.2: The County shall work closely with agencies involved in the management of forest ecosystems and shall coordinate with State and Federal agencies, private landowners, and private preservation/conservation groups in habitat preservation and protection of rare, endangered, threatened, and special concern species, to ensure consistency in efforts and to encourage joint planning and development of areas to be preserved. The County shall encourage State and Federal agencies to give notice to and coordinate with the County on any pending, contemplated, or proposed actions affecting local communities and citizens of the County. The County will encourage State and Federal agencies to address adverse impacts on citizens and communities of Fresno County, including environmental, health, safety, private property, and economic impacts.

Policy OS-B.3: The County shall coordinate with agencies involved in the regulation of timber harvest operations to ensure that County conservation goals are achieved.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that encourage partnerships and collaboration in managing the forest.

Policy OS-B.5: The County shall encourage and promote the productive use of wood waste generated in the county.

How the Sequoia National Forest Plan Considered These Components

Forest plan components include the productive use of biomass as appropriate.

Policy OS-B.6: The County shall encourage and support conservation programs to reforest private timberlands.

How the Sequoia National Forest Plan Considered These Components

Forest plan components include replanting of forest as appropriate and as funds allow.

Policy OS-B.7: The County shall protect forest resources for the production of timber resources and related activities.

How the Sequoia National Forest Plan Considered These Components

The forest plan addresses the suitability of land on the forest for timber production.

Policy OS-B.8: The County shall discourage the development of land uses that conflict with timberland management.

How the Sequoia National Forest Plan Considered These Components

The forest plan addresses the ecological, economic and social sustainability of forest lands.

Implementation Programs

Program OS-B.A: The County, in consultation with the California Department of Forestry and Fire Protection, shall conduct a careful evaluation of the Forest Practice Rules with regard to: clearcutting and other forest management practices with potential visual impacts; use of prescribed burning; protection of biological, soil, and water resources; and protection of old growth forest in Fresno County. If the Forest Practice Rules are determined to be inadequate, a compilation of Special Forest Practice Rules for Fresno County shall be proposed to the Board of Forestry to address those inadequacies.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that address visual impacts, encourages the use of fire as an ecological process, protection of biological and water resources and watershed restoration and desired conditions for old forest conditions.

Program OS-B.C: The County shall encourage the U.S. Forest Service and the California Department of Forestry and Fire Protection to identify potential impacts on, and the need for preservation of, old growth forest in Fresno County.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes desired conditions for old forest conditions.

Natural Resources

Wetland and Riparian Areas

Policy OS-D.4: The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.

Policy OS-D.7: The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats.

Program OS-D.B: The County shall adopt an ordinance for riparian protection zones identifying allowable activities in riparian protection zones and allowable mitigation techniques.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components to meet the desired conditions of riparian area and watershed resiliency. These components were considered in the “Riparian Conservation Areas,” “Conservation Watersheds,” and other watershed sections of the plan.

Policy OS-D.5: The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components to meet the desired conditions of protection of upland areas adjacent to riparian areas.

Fish and Wildlife

Policy OS-E.1: The County shall support efforts to avoid the “net” loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife

movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.16: Areas that have unusually high value for fish and wildlife propagation should be preserved in a natural state to the maximum possible extent.

How the Sequoia National Forest Plan Considered These Components

Forest plan direction is designed to maintain the diversity of plant and animal communities and support the persistence of native species within the plan area, subject to the extent of Forest Service authority and the inherent capability of the plan area. These components were considered in the “Animal and Plant Species” sections of the plan.

Policy OS-E.5: The County shall support preservation of habitats of rare, threatened, endangered, and/or other special-status species including fisheries. The County shall consider developing a formal Habitat Conservation Plan in consultation with Federal and State agencies, as well as other resource conservation organizations. Such a plan should provide a mechanism for the acquisition and management of lands that support special-status species.

Policy OS-E.6: The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife populations, as long as this preservation does not threaten the economic well-being of the county.

Policy OS-E.10: The County shall support State and Federal programs to acquire significant fish and wildlife habitat areas for permanent protection and/or passive recreation use.

Policy OS-E.11: The County shall protect significant aquatic habitats against excessive water withdrawals that could endanger special-status fish and wildlife or would interrupt normal migratory patterns.

Policy OS-E.12: The County shall ensure the protection of fish and wildlife habitats from environmentally-degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.

Policy OS-E.13: The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.

Policy OS-E.14: The County shall require a minimum 200-foot-wide wildlife corridor along particular stretches of the San Joaquin River and Kings River, whenever possible. The exact locations for the corridors should be determined based on the results of biological evaluations of these watercourses. Exceptions may be necessary where the minimum width is infeasible due to topography or other physical constraints. In these instances, an offsetting expansion on the opposite side of the river should be considered.

Policy OS-E.17: The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.

Policy OS-E.18: The County should preserve areas identified as habitats for rare or endangered plant and animal species primarily through the use of open space easements and appropriate zoning that restrict development in these sensitive areas.

Policy OS-F.3: The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

Policy OS-F.4: The County shall ensure that landmark trees are preserved and protected whenever possible.

How the Sequoia National Forest Plan Considered These Components

Forest Plan direction includes plan components that address the needs of at-risk species within the plan area and provides for the sustainable use and enjoyment of fish, wildlife, and plants. This also includes at-risk species. At-risk species include (1) federally listed threatened, endangered, proposed, or candidate species under the federal Endangered Species Act, and (2) species of conservation concern (SCCs). For each species or group of species and within the species range, the forest plan considers the extent that plan components provide for ecosystem integrity and ecosystem diversity that meet the ecological conditions necessary for those species and adds additional species-specific plan components as needed.

Policy OS-E.15: The County should preserve, to the maximum extent practicable, significant wildlife migration routes such as the North Kings Deer Herd migration corridors and fawn production areas.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes collaboration with the California Department of Fish and Wildlife for assessing potential disturbance factors to deer during the planning phase of vegetation management projects.

Policy OS-F.5: The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components supporting desired conditions for oak woodlands, old forest, aspen and special habitats. The Plan also includes plan components related to riparian areas as addressed above. Special area protection is included including protection of areas with giant redwoods.

Although not part of the forest plan, federal regulations under the National Environmental Policy Act include analyzing the effects of projects including the impacts to biological resources.

Policy OS-F.9: The County shall support the continued use of prescribed burning to mimic the effects of natural fires to reduce fuel volumes and associated fire hazards to human residents and to enhance the **health of biotic communities.**

How the Sequoia National Forest Plan Considered These Components

The forest plan includes the reintroduction of fire as a natural ecological process into the forest to maintain ecological resiliency.

Policy OS-F.11: The County shall promote the preservation and management of oak woodlands by encouraging landowners to follow the Fresno County Oak Management Guidelines shown below and to prepare an Oak Management Plan for their property.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that support the oak woodlands desired conditions.

Parks and Recreation

Policy OS-H.1: The County shall promote the continued and expanded use of national forest, national park, and other recreational areas to meet the recreational needs of County residents.

Policy OS-H.5: The County shall encourage Federal, State, and local agencies currently providing recreation facilities to maintain, at a minimum, and improve, if possible, their current levels of service.

Policy OS-H.7: The County shall encourage the development of public and private campgrounds and recreational vehicle parks where environmentally appropriate. The intensity of such development should not exceed the environmental carrying capacity of the site and its surroundings.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that enhance and maintain sustainable recreation. These components were considered in the “Sustainable Recreation” sections of the plan, both forestwide direction and within the Sustainable Recreation Management Areas. Pieces of the “Local Communities” section also address the work needed with local governments for tourism opportunities. The watershed, riparian conservation area, and conservation watersheds plan components address the sustainability and management of water resources on the national forest.

Recreational Trails

Policy OS-I.1: The County shall develop a countywide Recreational Trail Master Plan, integrated with existing County facilities, similar facilities in cities and adjoining counties, and on State and Federal land. The recreational trail system shall be oriented to providing safe, off-street access from urban areas to regional recreation facilities of countywide importance.

Policy OS-I.11: The County shall seek the provision of recreation trails in future foothill and mountain developments.

Policy OS-I.16: The County shall encourage public/private partnerships to implement and maintain trails.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components related to National Recreation Trails and trail maintenance and collaboration to enhance trail maintenance as well as other recreational objectives. The plan considers the cooperation of multiple agencies and landowners in trail management. This direction is found within the forestwide Sustainable Recreation section, as well as the Volunteers, Interpretation, Partnerships, and Stewardship section of the plan.

Policy OS-J.6: The County shall provide for the placement of historical markers or signs on adjacent County roadways and major thoroughfares to attract and inform visitors of important historic resource sites. If such sites are open to the public, the County shall ensure that access is controlled to prevent damage or vandalism.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that encourage forest interpretation. These components were considered in the “Cultural Resources” sections of the plan

Policy OS-J.8: The County shall support efforts of other organizations and agencies to preserve and enhance historic resources for educational and cultural purposes through maintenance and development of interpretive services and facilities at County recreational areas and other sites.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that preservation and maintenance of cultural resources including historic buildings.

Policy OS-J.13: The County shall encourage State and Federal agencies to purchase significant geologic resources for permanent protection.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components address withdrawal of minerals and protection of special geological areas.

Scenic Resources

Policy OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

Policy OS-K.2: The County shall identify and map significant scenic resources within the County and shall develop a program to manage these resources.

Policy OS-K.3: The County should preserve areas of natural scenic beauty and provide for public access to scenic vistas by purchasing sites for park use.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components to support the desired conditions of providing a variety of ecologically sound, resilient and visually appealing forest landscapes which sustain scenic character, supporting the forest recreation program niche in ways that contribute to visitors’ sense of place and connection with nature. These components were considered in the “Sustainable Recreation” sections of the plan.

Scenic Roadways

Policy OS-L.3: The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

- a) Timber harvesting within or adjacent to the right-of-way shall be limited to that which is necessary to maintain and enhance the quality of the forest;
- b) Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way;

- c) Installation of signs visible from the right-of-way shall be limited to business identification signs, on-site real estate signs, and traffic control signs necessary to maintain safe traffic conditions. All billboards and other advertising structures shall be prohibited from location within view of the right-of-way;
- d) Intensive land development proposals including, but not limited to, subdivisions of more than four lots, commercial developments, and mobile home parks shall be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space area two hundred (200) feet in depth parallel to the right-of-way.

Modification of the setback requirement may be appropriate when any one of the following conditions exist:

- 1) Topographic or vegetative characteristics preclude such a setback;
 - 2) Topographic or vegetative characteristics provide screening of buildings and parking areas from the right-of-way;
 - 3) Property dimensions preclude such a setback; or
 - 4) Development proposal involves expansion of an existing facility or an existing concentration of uses.
- e) Subdivision proposals shall be designed to minimize the number of right-of-way access drives;
 - f) Developments involving concentration of commercial uses shall be designed to function as an integral unit with common parking areas and right-of-way access drives; and
 - g) Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with landscape plantings or artificial screens which harmonize with the natural landscape.

Policy OS-L.6: The County shall request city, State, and Federal agencies to maintain County-designated landscaped drives, scenic drives, and scenic highways under their jurisdictions in a manner consistent with the goals and policies in this section.

Scenic drives are rural roads traversing land with outstanding natural scenic qualities and connecting with scenic highways. Scenic highways are highways that traverse land with unique or outstanding scenic quality or provide access to regionally significant scenic and recreational areas.

How the Sequoia National Forest Plan Considered These Components

The forest plan identifies scenic byways and includes plan components that preserve sensitive scenic landscapes as described above.

Fire Hazards

Policy HS-B.3: The County shall require that development in high fire hazard areas have fire resistant vegetation, cleared fire breaks separating communities or clusters of structures from native vegetation, or a long-term comprehensive vegetation and fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.

Policy HS-B.6: The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection, and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression and in managing wildland fire hazards.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components for fire management zones which address the need to reduce the risk of loss of damage to communities from wildfire. These components were considered in the “Fire” and “Strategic Fire Management Zones” sections of the plan

Kern County

Policies in many elements of the Kern County General Plan were found to be relevant to the Sequoia Forest revised plan. These policies were reviewed for consistency with the forest’s revised plan. No conflicts between the Kern County Plan elements and the components of the revised plan have been discovered. The discussion below highlights relevant consistencies between the plans.

Kern County Goals and Policies Related to the Sequoia NF as Expressed in General Plan

Element 1.0 Land Use/Conservation /Open Space

Goal: Non-Jurisdictional land - To promote harmonious and mutually beneficial uses of land among the various jurisdictions and land management entities present in Kern County.

How the Sequoia National Forest Plan Considered These Components

Under the 2012 Planning Rule forests must provide for social, economic, and ecological sustainability within Forest Service authority and consistent with the inherent capability of the plan area.

Policies: Non-jurisdictional Land

1.4: The County will solicit comments and coordinate with local governments, the military, and other federal or State jurisdictions on projects which are proposed within a peripheral area established mutual agreement between the County and the jurisdiction.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that encourage partnerships and collaboration in managing the forest.

Element 3.1 Access (Kern River Plan)

3.1.2 Goals: To provide present and future generations of residents in the Bakersfield metropolitan area and surrounding regions means of access to the Kern River for public use and enjoyment and provide for preservation of native plants, wildlife and cultural resources of the River area while, at the same time, providing for protection of private property rights.

How the Sequoia National Forest Plan Considered These Components

The sustainable recreation plan components address tourism opportunities at the programmatic level for the Sequoia NF. The water, soils, and watershed plan components address the sustainability and management of water resources on the forest. These components were considered in the “Sustainable Recreation” sections of the plan.

3.2 Open Space versus Development (Kern River Plan)

3.2.2 Goals: To ensure that the open spaces of the Kern River are maintained and enhanced as a unique and valuable resource for the Bakersfield metropolitan area. Guide and assist existing and proposed development in such a way as to protect open space and enhance environmental quality of those developed lands adjacent to the River area.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components to support the desired conditions of providing a variety of ecologically sound, resilient and visually appealing forest landscapes which sustain scenic character, supporting the forest recreation program niche in ways that contribute to visitors' sense of place and connection with nature.

3.3 Riparian Vegetation and Wildlife Habitat

Goals: To protect and enhance not only such rare and endangered plant or animal species and habitat as may occur in the River area, but also the variety of non-endangered indigenous wildlife and wildlife habitat of the River. Avoid destruction of habitats and improve wildlife habitat. Provide opportunities for studies, research, and observation of wildlife in the River area.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components to meet the desired conditions of riparian area and watershed resiliency. The 2012 Planning Rule emphasizes the development of forest plans that provide ecological, economic and social sustainability. The Sequoia NF plan is designed to develop a sustainable and resilient forest through the creation of desired conditions for forest ecosystems. Additionally, the mission of the Forest Service is multiple uses and therefore the plans include components that address recreation, grazing watershed and wildlife which comports with the County Plan goal and policies.

The forest plan includes plan components that encourage partnerships and collaboration in managing the forest.

These components were considered in the "Riparian Conservation," "Plant and Animal Species" and watershed sections of the plan.

3.4 Floodplain Management

3.4.2 Goals: To maintain the integrity of the River channel so as to facilitate a floodway for Kern River waters for the health and safety of the community. To maximize and fully utilize the groundwater recharge potential of the Kern River, its floodplains and other potential recharge aquifers. Enhance riparian vegetation and wildlife habitats as a component of groundwater recharge programs. Design recharge facilities in such a way as to facilitate public use for riding and hiking trails, nature study, or other non-intensive forms of recreation. Encourage protection of land within the plan area which preserves and propagates examples of endemic and endangered plant species.

How the Sequoia National Forest Plan Considered These Components

The forest plan includes plan components that address watershed restoration which is a means for attaining water resource sustainability; groundwater quality and quantity preservation and water quality. These components were considered in the "Watershed Conservation" and other watershed sections of the plan.

3.5 Private Property and Public Use

3.5.2 Goals: To provide an equitable means by which public use and enjoyment of the Kern River can take place while, at the same time, protecting the rights of private properties in the River area. Seek means by which both private and public interests can be served for mutual benefit.

How the Sequoia National Forest Plan Considered These Components

The revised plan addresses sustainable recreation at the programmatic level and plan components allow for the ability to address changes in recreation use on the forest. These components were considered in the “Sustainable Recreation” sections of the plan.

4. Safety Element

4.1 Goals: Reduce economic and social disruption resulting from earthquakes, fire, flooding, and other geologic hazards by assuring the continuity of vital emergency public services and functions.

- Assist in the allocation of public resources in Kern County to develop information regarding geologic, fire, and flood safety hazards and to develop a systematic approach toward the protection of public health, safety, and welfare from such hazards.
- Create an awareness of the residents in Kern County through the dissemination of information about geologic, fire, and flood safety hazards.
- Ensure the availability and effective response of emergency services following a catastrophic event.

How the Sequoia National Forest Plan Considered These Components

Fire plan components provide management direction for the use of fire on the landscape and continued direction for protection of public health and safety.

4.2 Policy: General Policies and Implementation Measure, Which Apply to More Than One Safety Constraint

How the Sequoia National Forest Plan Considered These Components

Public safety is addressed through law, regulation, and Forest Service policy and this direction will not be repeated in the revised plan.

4.7 Kern County Emergency Plan

4.10 Abandoned Open Shafts and Wells: In some areas of the County, there exist abandoned mine shafts which, if not secured, contribute to the injury of or fatality to unsuspecting members of the public. Many such shafts are within lands owned and controlled by various agencies of the federal government.

Implementation Measure: Work with State and federal governments to assure that existing mine shafts are properly abandoned and designated.

How the Sequoia National Forest Plan Considered These Components

Plan components address working collaboratively with stakeholders to maintain and improve safety on the forest.

Element 5.0 Energy

5.2 Importance of Energy to Kern County: Goal: To assert Kern County's position as California's leading energy producer, to encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decisions and actions of other agencies as they affect energy development in Kern County.

How the Sequoia National Forest Plan Considered These Components

The forest plan addresses consideration of the extraction and potential development of energy sources, which are managed in a manner that protects natural resources, public health and safety.

Tulare County

The Sequoia National Forest falls within the Open Space designation in the Environmental Resource Management Component of the Tulare County General Plan. Elements have been identified in the Environmental Resource Management Component which was considered in this revision process. Portions of the forest also fall within watersheds found within Tulare County which was identified in the Water Resource Component of the General Plan. No conflicts between the Tulare County Plan elements and the components of the revised plan have been discovered. The table below highlights relevant consistencies between the plans.

Tulare County Goals and Policies Related to the Sequoia National Forest as Expressed in General Plan

ERM-1: To preserve and protect sensitive significant habitats, enhances biodiversity, and promotes healthy ecosystems throughout the County.

How the Sequoia National Forest Plan Considered These Components

Plan components have addressed at-risk species and provide for the persistence and viability of these species and habitats on the Sequoia NF. These components were considered in the “Animal and Plant Species” sections of the plan.

ERM-2: To conserve protect and encourage the development of areas containing mineral deposits while considering values relating to water resources, air quality, agriculture, traffic, biotic, recreation, aesthetic enjoyment, and other public interest values.

ERM-3: To protect the current and future extraction of mineral resources that are important to the County’s economy while minimizing impacts of this use on the public and the environment.

How the Sequoia National Forest Plan Considered These Components

Suitability of lands addresses the potential development of areas for mineral exploration.

ERM-4: To encourage energy conservation in new and existing developments throughout the County.

How the Sequoia National Forest Plan Considered These Components

Suitability of lands addresses the potential development and expansion of energy developments.

ERM-5: To provide a parks, recreation, and open space system that serves the recreational needs of County residents and visitors, with special emphasis on recreation related to Environmental Resource Management.

How the Sequoia National Forest Plan Considered These Components

Sustainable recreation plan components address continued and expanding recreation needs at the programmatic level.

ERM-6: To manage and protect sites of cultural and archaeological importance for the benefit of present and future generations.

How the Sequoia National Forest Plan Considered These Components

Plan components address cultural resources.

ERM-7: To preserve and protect soil resources in the County for agricultural and timber productivity and protect public health and safety.

How the Sequoia National Forest Plan Considered These Components

Plan components have been added to address soil conditions. The plan is designed to develop a sustainable and resilient forest through the creation of desired conditions for forest ecosystems

WR-1: To provide for the current and long-range water needs for the County and for this protection of the quality and quantity of surface and groundwater resources.

WR-: To provide for the current and long-range water needs of the County and for the protection of the quality of surface water and groundwater resources.

WR-3: To provide a sustainable, long-term supply of water resources to meet domestic, agricultural, industrial, and recreational needs and to assure that new urban development is consistent with available water resources.

How the Sequoia National Forest Plan Considered These Components

The revised plan includes plan components that address water quality and watershed conditions. These components were considered in the “Watershed Conservation” and other watershed sections of the plan.

Sierra National Forest

The Sierra National Forest occurs within three counties: Fresno, Madera, and Mariposa Counties in California. County plans can be used as a source of information on the history of land use within the region, patterns of development, desired conditions, and current county land use goals, objectives, and policies. County governments hold no legal authority over independent jurisdictions such as Federal and State lands, incorporated cities and towns, or Native American Tribal reservations.

County land use within the planning area ranges from traditional uses such as farming and ranching in rural areas (Mariposa County) to denser concentrations of residential, industrial, and commercial uses in and around suburban and urban areas (Fresno and Madera Counties). One of the common themes is how, and whether, private owners and public land managers can manage the competing priorities of resource conservation and economic development; in particular, how to cope with the growing demands for housing and recreation while ensuring preservation of a shrinking natural resource base that contributes to the Sierra Nevada’s highly valued rural character.

Fresno County

Policies in many elements of the Fresno County General Plan were found to be relevant to the Sierra Forest revised plan. These policies were reviewed for consistency with the Sierra National Forest revised plan. No conflicts between the Fresno County Plan elements and the components of the revised plan have been discovered. The discussion below highlights relevant consistencies between the plans.

Fresno County Goals and Policies Related to the Sierra NF as Expressed in General Plan

Fire

Policy PF-H.5: The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.

Policy PF-H.7: The County shall encourage local fire protection agencies in the county to maintain the following as minimum fire protection standards (expressed as Insurance Service Organization (ISO) ratings):

- a. ISO 4 in urban areas;
- b. ISO 6 in suburban areas; and
- c. ISO 8 in rural areas.

Policy PF-H.8: The County shall encourage local fire protection agencies in the county to maintain the following as minimum standards for average first alarm response times to emergency calls:

- a. 5 minutes in urban areas;
- b. 15 minutes in suburban areas; and
- c. 20 minutes in rural areas.

Program PF-H.B: The County shall work with the California Department of Forestry and Fire Protection, local fire protection agencies, and city fire departments to maximize the use of resources to develop functional and/or operational consolidations and standardization of services and to maximize the efficient use of fire protection resources.

How the Sierra National Forest Plan Considered These Components

Fire management zones have been designated and plan components address the need to reduce the risk of loss of damage to communities from wildfire and also to address areas where wildfire is needed for ecological restoration. The Strategic Fire Management Zones help support decision-makers before a fire ignition occurs by pre-assessing the risk and benefits from wildland fire to areas on the landscape.

The forest would continue to work with adjacent landowners and agencies in fire management efforts for protection of public health and safety. These components were considered in the “Fire” and “Strategic Fire Management Zones” sections of the plan.

Open Space and Conservation Element

Policy OS-A.1: The County shall develop, implement, and maintain a plan for achieving water resource sustainability, including a strategy to address overdraft and the needs of anticipated growth.

Policy OS-A.3: The County shall provide active leadership in efforts to protect, enhance, monitor, and manage groundwater resources within its boundaries.

Policy OS-A.4: The County shall update, implement, and maintain its Groundwater Management Plan.

Policy OS-A.12: The County shall promote preservation and enhancement of water quality by encouraging landowners to follow the “Fresno County Voluntary Rangeland and Foothill Water Quality Guidelines.”

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest’s Plan includes plan components that address watershed restoration and conservation, which is a means for attaining water resource sustainability; groundwater quality and quantity preservation and water quality. These components were considered in the “Conservation Watersheds” and other watershed sections of the plan.

Water Quality

Policy OS-A.25: The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

Policy OS-A.26: The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest’s Plan includes plan components to protect water quality, reduce erosion, and encourage the restoration and conservation of watersheds. Compliance with best management practices is required as part of the plan. These components were considered in the ““Conservation Watersheds” and other watershed sections of the plan.

Forest Resources

Goal OS-B: To maintain healthy, sustainable forests in Fresno County, conserve forest resources, enhance the quality and diversity of forest ecosystems, reduce conflicts between forestry and other uses, encourage a sustained yield of forest products, protect and conserve lands identified as suitable for commercial timber production within the county, and conserve forest lands that have other resource values including recreation, grazing, watershed, and wildlife habitats.

How the Sierra National Forest Plan Considered These Components

The 2012 Planning Rule emphasizes the development of forest plans that provide ecological, economic and social sustainability. The Sierra National Forest’s plan is designed to develop a sustainable and resilient forest through the creation of desired conditions for forest ecosystems. Additionally, the mission of the Forest Service is multiple use and therefore the plans include components that address recreation, grazing, watershed and wildlife habitat management, which comports with the County Plan goal and policies. These components were considered in the “Timber and Other Forest Products” and “Terrestrial Ecosystems and Vegetation” sections of the plan.

Policy OS-B.1: The County shall encourage the sustained productive use of forest land as a means of providing open space and conserving natural resources.

How the Sierra National Forest Plan Considered These Components

The forest plan addresses timber suitability of Sierra National Forest land and encourages public use of the forest.

Policy OS-B.2: The County shall work closely with agencies involved in the management of forest ecosystems and shall coordinate with State and Federal agencies, private landowners, and private preservation/conservation groups in habitat preservation and protection of rare, endangered, threatened, and special concern species, to ensure consistency in efforts and to encourage joint planning and development of areas to be preserved. The County shall encourage State and Federal agencies to give notice to and coordinate with the County on any pending, contemplated, or proposed actions affecting local communities and citizens of the County. The County will encourage State and Federal agencies to address adverse impacts on citizens and communities of Fresno County, including environmental, health, safety, private property, and economic impacts.

Policy OS-B.3: The County shall coordinate with agencies involved in the regulation of timber harvest operations to ensure that County conservation goals are achieved.

How the Sierra National Forest Plan Considered These Components

The forest plan includes plan components that encourage partnerships and collaboration in managing the forest.

Policy OS-B.5: The County shall encourage and promote the productive use of wood waste generated in the county.

How the Sierra National Forest Plan Considered These Components

The forest plan components include recognition of the productive use of biomass from the forest.

Policy OS-B.6: The County shall encourage and support conservation programs to reforest private timberlands.

How the Sierra National Forest Plan Considered These Components

The forest plan components include replanting of forest as appropriate and as funds allow.

Policy OS-B.7: The County shall protect forest resources for the production of timber resources and related activities.

How the Sierra National Forest Plan Considered These Components

The forest plan addresses the suitability of land on the forest for timber production.

Policy OS-B.8: The County shall discourage the development of land uses that conflict with timberland management.

How the Sierra National Forest Plan Considered These Components

The forest plan addresses balancing the ecological, economic and social sustainability of forest lands.

Implementation Programs

Program OS-B.A: The County, in consultation with the California Department of Forestry and Fire Protection, shall conduct a careful evaluation of the Forest Practice Rules with regard to: clearcutting and other forest management practices with potential visual impacts; use of prescribed burning; protection of biological, soil, and water resources; and protection of old growth forest in Fresno County. If the Forest Practice Rules are determined to be inadequate, a compilation of Special Forest Practice Rules for Fresno County shall be proposed to the Board of Forestry to address those inadequacies.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components that address visual impacts, encourages the use of fire as an ecological process, protection of biological and water resources and watershed restoration and desired conditions for old forest conditions.

Program OS-B.C: The County shall encourage the U.S. Forest Service and the California Department of Forestry and Fire Protection to identify potential impacts on, and the need for preservation of, old growth forest in Fresno County.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes desired conditions for old forest conditions.

Natural Resources

Wetland and Riparian Areas

Policy OS-D.4: The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.

Policy OS-D.7: The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats.

Program OS-D.B: The County shall adopt an ordinance for riparian protection zones identifying allowable activities in riparian protection zones and allowable mitigation techniques.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components to meet the desired conditions of riparian area and watershed resiliency. These components were considered in the “Riparian Conservation Areas,” “Conservation Watersheds,” and other watershed sections of the plan.

Policy OS-D.5: The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components to meet the desired conditions of protection of upland areas adjacent to riparian areas.

Fish and Wildlife

Policy OS-E.1: The County shall support efforts to avoid the “net” loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.16: Areas that have unusually high value for fish and wildlife propagation should be preserved in a natural state to the maximum possible extent.

How the Sierra National Forest Plan Considered These Components

Sierra National Forest plan direction is designed to maintain the diversity of plant and animal communities and support the persistence of native species within the plan area, subject to the extent of Forest Service authority and the inherent capability of the plan area. These components were considered in the “Animal and Plant Species” sections of the plan.

Policy OS-E.5: The County shall support preservation of habitats of rare, threatened, endangered, and/or other special-status species including fisheries. The County shall consider developing a formal Habitat Conservation Plan in consultation with Federal and State agencies, as well as other resource conservation organizations. Such a plan should provide a mechanism for the acquisition and management of lands that support special-status species.

Policy OS-E.6: The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife populations, as long as this preservation does not threaten the economic well-being of the county.

Policy OS-E.10: The County shall support State and Federal programs to acquire significant fish and wildlife habitat areas for permanent protection and/or passive recreation use.

Policy OS-E.11: The County shall protect significant aquatic habitats against excessive water withdrawals that could endanger special-status fish and wildlife or would interrupt normal migratory patterns.

Policy OS-E.12: The County shall ensure the protection of fish and wildlife habitats from environmentally-degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.

Policy OS-E.13: The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.

Policy OS-E.14: The County shall require a minimum 200-foot-wide wildlife corridor along particular stretches of the San Joaquin River and Kings River, whenever possible. The exact locations for the corridors should be determined based on the results of biological evaluations of these watercourses. Exceptions may be necessary where the minimum width is infeasible due to topography or other physical constraints. In these instances, an offsetting expansion on the opposite side of the river should be considered.

Policy OS-E.17: The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.

Policy OS-E.18: The County should preserve areas identified as habitats for rare or endangered plant and animal species primarily through the use of open space easements and appropriate zoning that restrict development in these sensitive areas.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan direction includes plan components that address the needs of at-risk species within the plan area and provides for the sustainable use and enjoyment of fish, wildlife, and plants. This also includes at-risk species. At-risk species include (1) federally listed threatened, endangered, proposed, or candidate species under the federal Endangered Species Act, and (2) species of conservation concern (SCCs). For each species or group of species and within the species range, the forest plan considers the extent that plan components provide for ecosystem integrity and ecosystem diversity that meet the ecological conditions necessary for those species and adds additional species-specific plan components as needed.

Policy OS-E.15: The County should preserve, to the maximum extent practicable, significant wildlife migration routes such as the North Kings Deer Herd migration corridors and fawn production areas.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes collaboration with the California Department of Fish and Wildlife for assessing potential disturbance factors to deer during the planning phase of vegetation management projects.

Policy OS-F.3: The County shall support the preservation of significant areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

Policy OS-F.11: The County shall promote the preservation and management of oak woodlands by encouraging landowners to follow the Fresno County Oak Management Guidelines shown below and to prepare an Oak Management Plan for their property.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components supporting desired conditions for oak woodlands, old forest, aspen and special habitats. The Plan also includes plan components related to riparian areas as addressed above.

Policy OS-F.4: The County shall ensure that landmark trees are preserved and protected whenever possible.

How the Sierra National Forest Plan Considered These Components

Although no term landmark tree is mentioned in the forest plan, special area protection is included including protection of areas with giant redwoods.

Policy OS-F.5: The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

How the Sierra National Forest Plan Considered These Components

Although not part of the forest plan, federal regulations under the National Environmental Policy Act include analyzing the effects of projects including the impacts to biological resources.

Policy OS-F.9: The County shall support the continued use of prescribed burning to mimic the effects of natural fires to reduce fuel volumes and associated fire hazards to human residents and to enhance the health of biotic communities.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes the reintroduction of fire as a natural ecological process into the forest to maintain ecological resiliency.

Parks and Recreation

Policy OS-H.1: The County shall promote the continued and expanded use of national forest, national park, and other recreational areas to meet the recreational needs of County residents.

Policy OS-H.5: The County shall encourage Federal, State, and local agencies currently providing recreation facilities to maintain, at a minimum, and improve, if possible, their current levels of service.

Policy OS-H.7: The County shall encourage the development of public and private campgrounds and recreational vehicle parks where environmentally appropriate. The intensity of such development should not exceed the environmental carrying capacity of the site and its surroundings.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components that enhance and maintain sustainable recreation and recreational opportunities on the forest. These components were considered in the “Sustainable Recreation” sections of the plan, both forestwide direction and within the Sustainable Recreation Management Areas. Pieces of the “Local Communities” section also address the work needed with local governments for tourism opportunities. The watershed, riparian conservation area, and conservation watersheds plan components address the sustainability and management of water resources on the national forest.

Recreational Trails

Policy OS-I.1: The County shall develop a countywide Recreational Trail Master Plan, integrated with existing County facilities, similar facilities in cities and adjoining counties, and on State and Federal land. The recreational trail system shall be oriented to providing safe, off-street access from urban areas to regional recreation facilities of countywide importance.

Policy OS-I.11: The County shall seek the provision of recreation trails in future foothill and mountain developments.

Policy OS-I.16: The County shall encourage public/private partnerships to implement and maintain trails.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components related to National Recreation Trails and trail maintenance and collaboration to enhance trail maintenance as well as other recreational objectives. The plan considers the cooperation of multiple agencies and landowners in trail management. This direction is found within the forestwide Sustainable Recreation section, as well as the Volunteers, Interpretation, Partnerships, and Stewardship section of the plan.

Historical, Cultural, and Geological Resources

Policy OS-J.6: The County shall provide for the placement of historical markers or signs on adjacent County roadways and major thoroughfares to attract and inform visitors of important historic resource sites. If such sites are open to the public, the County shall ensure that access is controlled to prevent damage or vandalism.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components that encourage maintaining and developing forest interpretation opportunities. These components were considered in the “Cultural Resources” sections of the plan.

Policy OS-J.8: The County shall support efforts of other organizations and agencies to preserve and enhance historic resources for educational and cultural purposes through maintenance and development of interpretive services and facilities at County recreational areas and other sites.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components that preservation and maintenance of cultural resources including historic buildings.

Policy OS-J.13: The County shall encourage State and Federal agencies to purchase significant geologic resources for permanent protection.

How the Sierra National Forest Plan Considered These Components

The forest plan includes plan components address withdrawal of minerals and protection of special geological areas.

Scenic Resources

Policy OS-K.1: The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.

Policy OS-K.2: The County shall identify and map significant scenic resources within the County and shall develop a program to manage these resources.

Policy OS-K.3: The County should preserve areas of natural scenic beauty and provide for public access to scenic vistas by purchasing sites for park use.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan includes plan components to support the desired conditions of providing a variety of ecologically sound, resilient and visually appealing forest landscapes which sustain scenic character, supporting the forest recreation program niche in ways that contribute to visitors' sense of place and connection with nature. These components were considered in the "Sustainable Recreation" sections of the plan.

Scenic Roadways

Policy OS-L.3: The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:

- a) Timber harvesting within or adjacent to the right-of-way shall be limited to that which is necessary to maintain and enhance the quality of the forest;
- b) Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way;
- c) Installation of signs visible from the right-of-way shall be limited to business identification signs, on-site real estate signs, and traffic control signs necessary to maintain safe traffic conditions. All billboards and other advertising structures shall be prohibited from location within view of the right-of-way;
- d) Intensive land development proposals including, but not limited to, subdivisions of more than four lots, commercial developments, and mobile home parks shall be designed to blend into the natural landscape and minimize visual scarring of vegetation and terrain. The design of said development proposals shall also provide for maintenance of a natural open space area two hundred (200) feet in depth parallel to the right-of-way.

Modification of the setback requirement may be appropriate when any one of the following conditions exist:

- 1) Topographic or vegetative characteristics preclude such a setback;
 - 2) Topographic or vegetative characteristics provide screening of buildings and parking areas from the right-of-way;
 - 3) Property dimensions preclude such a setback; or
 - 4) Development proposal involves expansion of an existing facility or an existing concentration of uses.
- e) Subdivision proposals shall be designed to minimize the number of right-of-way access drives;

- f) Developments involving concentration of commercial uses shall be designed to function as an integral unit with common parking areas and right-of-way access drives; and
- g) Outside storage areas associated with commercial activities shall be completely screened from view of the right-of-way with landscape plantings or artificial screens which harmonize with the natural landscape.

Policy OS-L.6: The County shall request city, State, and Federal agencies to maintain County-designated landscaped drives, scenic drives, and scenic highways under their jurisdictions in a manner consistent with the goals and policies in this section.

Scenic drives are rural roads traversing land with outstanding natural scenic qualities and connecting with scenic highways. Scenic highways are highways that traverse land with unique or outstanding scenic quality or provide access to regionally significant scenic and recreational areas.

How the Sierra National Forest Plan Considered These Components

The Sierra National Forest plan identifies two scenic byways within the forest and includes plan components that preserve sensitive scenic landscapes as described above.

Fire Hazards

Policy HS-B.3: The County shall require that development in high fire hazard areas have fire resistant vegetation, cleared fire breaks separating communities or clusters of structures from native vegetation, or a long-term comprehensive vegetation and fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.

Policy HS-B.6: The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection, and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression and in managing wildland fire hazards.

How the Sierra National Forest Plan Considered These Components

The forest plan includes plan components for fire management zones which address the need to reduce the risk of loss of damage to communities from wildfire. These components were considered in the “Fire” and “Strategic Fire Management Zones” sections of the plan.

Madera County

The Agriculture and Natural Resource elements of the Madera County General Plan Policy Document (1995) were reviewed for consistency with the Sierra National Forest revised plan. Several goals were reviewed, including Forest Resources, Wetland and Riparian Areas, Fish and Wildlife Habitat, Open Space for the Preservation of Natural Resources, and Fire Hazards. No conflicts between the Madera County Plan elements and the components of the revised plan have been discovered. The discussion below highlights relevant consistencies between the plans.

Madera County Goals and Policies Related to the Sierra National Forest as Expressed in General Plan

Goal 5B: To conserve Madera County's forest resources, enhance the quality and diversity of forest ecosystems, reduce conflicts between forestry and other uses, and encourage a sustained yield of forest products.

How the Sierra National Forest Plan Considered These Components

Terrestrial vegetation, aquatic habitat, at-risk species, and timber plan components in the revised plan address this goal. Areas suitable for timber harvest are identified and included in the plan. These components were considered in the “Timber and Other Forest Products” sections of the plan.

Goal 5D: To protect wetland communities and related riparian areas throughout Madera County as valuable resources.

How the Sierra National Forest Plan Considered These Components

Aquatic habitat, watershed, and water plan components in the revised plan address this goal. These components were considered in the “Riparian Conservation Areas,” “Conservation Watersheds,” and other watershed sections of the plan.

Goal 5E: To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.

How the Sierra National Forest Plan Considered These Components

The plan includes plan direction for management and conservation of terrestrial vegetation, aquatic habitats, and at-risk species that address this goal. These components were considered in the “Animal and Plant Species” sections of the plan.

Goal 5H: To preserve and enhance open space lands to maintain the natural resources of the county.

How the Sierra National Forest Plan Considered These Components

Forest plan direction addresses the need to maintain open space, including wildlife corridors.

Goal 6C: To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.

How the Sierra National Forest Plan Considered These Components

Fire management zones have been designated and plan components address the need to reduce the risk of loss of damage to communities from wildfire and also to address areas where wildfire are needed for ecological restoration. These components were considered in the “Fire” and “Strategic Fire Management Zones” sections of the plan.

Mariposa County

Policies related to the Sierra National Forest revised plan were found in the Public Safety Element of the Mariposa County General Plan. No conflicts between the Mariposa County Plan elements and the components of the revised plan have been discovered. The discussion below highlights relevant consistencies between the plans.

Mariposa County Goals and Policies Related to the Sierra National Forest as Expressed in General Plan

8.26.010 Mandatory clearing of brush: Any person that owns, leases, controls, operates or maintains any building or structure in Mariposa County shall at all times do the following:

- A. Maintain around and adjacent to such building or structure a firebreak made by removing and clearing away, for a distance of not less than thirty feet on each side thereof or to the property line, whichever is nearer, all flammable vegetation or other combustible growth. This subdivision does not apply to single specimens of trees, ornamental shrubbery, or similar plants which are used as ground cover, if they do not form a means of rapidly transmitting fire from the native growth to any building or structure;
- B. Maintain around and adjacent to any such building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth which is located from thirty feet to one hundred feet from such building or structure or to the property line, whichever is nearer, as may be required by the county fire warden if he finds that, because of extra hazardous conditions, a firebreak of only thirty feet around such building or structure is not sufficient to provide reasonable fire safety. Grass and other vegetation located more than thirty feet from such building or structure and less than eighteen inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion;
- C. Remove that portion of any tree which extends within ten feet of the outlet of any chimney or stovepipe;
- D. Maintain any tree adjacent to or overhanging any building free of dead or dying wood;
- E. Maintain the roof of any structure free of leaves, needles, or other dead vegetative growth;
- F. Provide and maintain at all times a screen over the outlet of every chimney or stovepipe that is attached to any fireplace, stove, or other device that burns any solid or liquid fuel. The screen shall be constructed of nonflammable material with openings of not more than one-half-inch in size. (Ord. 550 Sec.1 (part), 1980).

How the Sierra National Forest Plan Considered These Components

The revised plan includes plan components addressing management of forest lands to support fire safety around communities, building and structures. These specific requirements to promote fire safety around structures are consistent with the goals in the Sierra National Forest plan of promoting community fire safety. These components were considered in the “Fire” and “Strategic Fire Management Zones” sections of the plan.

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